

**Abstracts of Grants Active in  
FY 1997**

***VOLUME ONE***

***Behavioral and Social Research Program***

**National Institute on Aging**

*National Institutes of Health*

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## Abstracts of Grants Active in FY 1997

### *Behavioral and Social Research Program*

National Institute on Aging  
National Institutes of Health

May 15, 1998

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## **Current Staff**

### **Project Officers**

Ronald P. Abeles (OAD) - Associate Director  
Jared Jobe (CFA)  
Marcia Ory (PGR, HCO)  
Sidney Stahl (OPS)  
Richard Suzman (DEM, HRE, EPI)  
Georgeanne E. Patmios (DEM, HRE, EPI)

### **Program Analyst**

Angie J. Chon-Lee

### **Grants Technical Staff**

Michelle Blanco (HCO, OPS, PGR)  
Angela Lingham (CFA, PSP)  
Donna Perry (DEM, EPI, HRE)

### **Lead Secretary**

Lesa McQueen

## **Behavioral and Social Research**

### ***National Institute on Aging***

The Behavioral and Social Research (BSR) Program of the National Institute on Aging (NIA) supports basic social and behavioral research and research training on aging processes and the place of older people in society. It focuses on how people change with aging, on the interrelationships between older people and social institutions (e.g., the family, health-care systems), and on the societal impact of the changing age composition of the population. Emphasis is placed upon the dynamic interplay between the aging of individuals and their changing social and physical environments.

BSR's basic goal in supporting research and training and in developing research resources (data sets) and methodologies is to produce a scientific knowledge base for maximizing people's health and functioning in their middle and later years and to increase active life expectancy. This knowledge base is required for informed and effective public policy, professional practice, and everyday life.

The program is guided by three basic assumptions:

1. The processes of aging are neither fixed nor immutable. They are the products of a complex interplay among social, behavioral, and biological factors.
2. Aging processes are influenced by and influence changing cultural, socioeconomic, and population structures, which vary over historical time.
3. Aging processes occur over the entire life course.

These assumptions imply that aging processes are subject to intentional modification and that the developing knowledge base can be used to guide interventions and to evaluate their intended and unintended consequences.

BSR is administratively organized into four units: The Office of the Associate Director, Adult Psychological Development, Demography and Population Epidemiology, and Social Science Research on Aging. In addition, two freestanding and crosscutting units provide leadership within BSR and across NIA in the areas of demographic research and social and behavioral research on Alzheimer's disease. BSR serves also as the administrative locus for the Congressionally mandated Task Force on Aging Research. Brief descriptions of BSR's components and example of research topics are set forth on the following pages.

## **Office of the Associate Director**

301-594-5943

Ronald P. Abeles, Associate Director

Lesa McQueen, Lead Secretary

Angie J. Chon-Lee, Program Analyst

The Office of the Associate Director provides overall scientific and administrative guidance and coordination for BSR's research and research training activities. Attached to the office are the three special administrative units with trans-BSR, trans-NIA, or trans-DHHS responsibilities.

The Coordinating Unit for Burdens of Care for Alzheimer's Disease (under the leadership of Marcia Ory) provides a center within BSR for research on Alzheimer's disease. In 1989, this free-standing unit was established in the Office of the Associate Director, BSR, to coordinate all research activities on the behavioral and social aspects of Alzheimer's disease such as studies of the burdens of family care, interventions to enhance everyday functioning and reduce family caregiving burdens, and the effects and the costs of different long-term care arrangements.

This administrative unit provides an identifiable point of contact for interaction with others within NIA and in the outside community for research on social and behavioral aspects of dementia in later life. Its mission is to summarize research findings and to develop and implement a research agenda on social and behavioral aspects of Alzheimer's disease. Emphasis is on caregivers' perceptions of and responses to Alzheimer's disease, the nature of caregiving, linkages between formal and informal care, interventions to reduce the burdens of care, ethnic differences in caregiving, and the costs of Alzheimer's disease for families and society.

The Office of Demography of Aging (ODA) (Richard Suzman, Director; Georgeanne Patmios, Program Analyst; Angie Chon-Lee, Program Analyst; Donna Perry, Program Assistant) was established late in FY 1991 in order to coordinate and implements a variety of demographic and related initiatives. NIA founded the Office in response to five needs:

- For a coordinated, consistent, dynamic, accurate source of aging-related demographic statistics and projections.
- For broad resources to stimulate and guide the development of aging-related demographic data and methods within NIA and other agencies.
- To be responsive to Congressional support: "The [House Committee on Appropriations, FY 1991] recognizes that many health problems facing our nation have important demographic, social and behavioral dimensions that merit systematic study and reiterates its support for the demographic research programs of the NICHD and NIA as core elements of the NIH's institutional mandate."
- For information and research on the cost of illness, which was and is currently handled on an ad hoc basis by the NIA Office of Planning, Analysis and International Activities (OPAIA), the NIA Director, and program staff. This need extends beyond the boundaries of demography of aging-- including also epidemiology, health services, and some aspects of economics.
- For NIA to reinforce its visibility as a national and international leader in the demography of aging.

In addition to providing NIA staff support and overall guidance to the Federal Interagency Forum on Aging--Related Statistics, the functions of the Office are:

- To facilitate communication and coordination in the development and use of data bases, identification of research opportunities, and in long-range research planning;
- To provide information for answering internal and external requests for demographic facts, developing cost-of-illness analyses, and for disseminating demographic reports; and
- To produce information via the synthesis, evaluation, and analysis of demographic information and the evaluation of selected public policies.

## **Adult Psychological Development**

301-496-3137

Jared Jobe, Chief

Angela Lingham, Grants Technical Assistant

Adult Psychological Development supports research concerned with environmental, social, and behavioral influences on cognitive functioning, personality, attitudes, and interpersonal relations over the life course.

The Cognitive Functioning and Aging research focuses attention on how external environmental factors (e.g., structure of the task) and internal psychological processes (e.g., motivation, emotional state) influence differences among people and affect a person's functioning over the life course. Representative topics include:

- behavior genetics;
- human factors;
- individual differences;
- cognition and health;
- interventions;
- memory strategies;
- perceptual skills;
- problem solving and decision making; and,
- reading, speech, and hearing comprehension.

Research on neuropsychological and pathological aspects of cognition, such as dementia's, is supported by NIA's Neuroscience and Neuropsychology of Aging Program.

Personality and Social Psychological Aging research emphasizes the dynamic interplay among psychological processes and personal relationships in the immediate social environment as people age. Representative topics include:

- attitudes, beliefs, and attributional processes;
- gender, race, social economic status, and personality;
- individual differences;
- interpersonal relationships;
- life course transitions;
- life satisfaction;
- motivation and emotion;
- perceived self-efficacy;
- personality changes over the life course;
- productive behaviors;
- self-concept;
- social cognition;
- social networks and supports; and
- stress and coping behaviors.

## **Demography and Population Epidemiology**

301-496-3138

Richard Suzman, Chief

Georgianne Patmios, Program Analyst

Donna Perry, Program Assistant

Simon Law, Clerk-Typist (Stay-in-School)

Demography and Population Epidemiology supports research and training on the changing older population in regard to its social, demographic, economic, and health characteristics and on the impact of these population characteristics on society as a whole. National and international comparative research is encouraged.

The Population Epidemiology focuses on health and mortality issues at older ages.

Representative topics include:

- prevalence, incidence, and age trajectories of health;
- forecasting of functioning, health and mortality;
- race, ethnic, and socioeconomic differentials in mortality; and
- the epidemiological transition in developing countries.

Representative topics in Demography of Aging include:

- medical and biodemography;
- life and active life expectancy;
- socioeconomic differentials in mortality;
- immigration and migration;
- changes in age-structure of populations; and
- modeling and forecasting of age-related processes.

The Health and Retirement Economics concentrates on economic factors associated with the well being of older people. Representative topics include:

- economic costs of disability (e.g., costs of Alzheimer's disease and related dementia) and cost-effectiveness of interventions;
- labor force participation rates and antecedents and consequences of retirement;
- income distributions, savings, consumption, housing costs;
- intergenerational transfers, long-term-care-related spend downs; and
- international comparisons of disability and pension policies.

## **Social Science Research on Aging**

301-402-4156

Marcia Ory, Chief

Sidney Stahl, Health Scientist Administrator

Michelle Blanco, Grants Technical Assistant

Anthony Cheung, Clerk-Typist (Stay-in-School)

Social Science Research (SSR) on Aging supports research and research training aimed at understanding the biopsychosocial processes linking health and behavior; the structure, process, and outcomes of health care and related services; and the social conditions influencing health, well-being, and functioning of people in the middle and later years. SSR's specific program areas are defined below.

The Psychosocial Geriatrics Research Section (Marcia Ory) is specifically focused on social and behavioral factors as they influence the health and physical functioning of people as they age.

Representative topics include:

- psychosocial predictors of morbidity, functioning, and mortality;
- health behaviors and behavior change interventions;
- illness behaviors and coping with chronic illnesses and disabilities; and
- gender differences in health and longevity with special emphasis on women's health and behavior.

The Health Care Organizations supports research on the antecedents of a wide range of formal health care and related services, as well as on the structure, processes, and outcomes of different formal care systems. Representative topics include:

- basic social science research on health care organizations and the impact of changing health care structures and delivery systems;
- the nature and effectiveness of new and evolving forms of home and community-based services for older people;
- behavioral, social, or environmental strategies for improving institutional care; and
- burdens of care for Alzheimer's disease.

The Older People in Society supports studies of how and with what consequences people are influenced by cultural and social institutions (family, community, societal groups) and how these institutions are, in turn, affected by older people themselves. Interpersonal studies and qualitative approaches are encouraged. Representative topics include:

- intergenerational relationships and grand-parenthood;
- informal caregiving in the family and community;
- work and caregiving roles;
- ethnicity and aging;
- community support networks;
- elder abuse and violence; and
- the influence of religion in the lives of older people.

## Explanatory Note

These abstracts are taken from research grants supported by the Behavioral and Social Research Program of the National Institute on Aging (BSR/NIA) that were active during the Fiscal year 1997. In all cases, the abstracts were prepared by the investigators and were obtained from two sources at the National Institutes of Health: a) CRISP (Computer Retrieval of Information of Scientific Projects) or b) the grant application. While an attempt has been made to be as complete as possible, abstracts of some research projects could not be obtained. Consequently, this publication does not represent an exhaustive compilation of all research supported by BSR/NIA.

In addition to including a brief description of the research project, each abstract contains the name and address of the principal investigator, the total (direct and indirect costs) awarded for one year, the BSR Section to which the grant is assigned, and the Initial Review Group that provided the primary scientific peer review of the research application. Moreover, the Project Number includes encoded information. Explanations of these codes are provided below. For example, the Project Number 5 R01 AG05739-03 indicates:

5	Type of Grant
R01	Mechanism
AG	Funding Institute
5739	Project Identifier
-03	Project Year

The abstracts are ordered alphabetically by the Principal Investigator's name within each program section. Abstracts for subprojects of multi-project grants, e.g., Program Project (P01) Grants, are also listed alphabetically by the investigator in charge of the subproject. For further information about specific research projects, please direct your inquiries to the principal investigators.

Bibliographic to key publications associated with each grant have been provided by the Principal Investigator. Many grants do not have listed because the grant is too new to have generated research publications or because they were not provided. from subprojects of multi-project awards are listed under the name of the Principal Investigator of the multi-project grant (not under the name of the Principal Investigator of the subproject). Admittedly, this is rather cumbersome and reflects the fact that the citations were in part collected and organized for other administrative purposes.

## Project Number Codes

### Type

1	New
2	Competing Renewal
3	Supplement
5	Noncompeting Continuation
6	Change of Institution

### Mechanism

R01	Regular Research Project
R13	Conference
R15	Academic Research Enhancement Award
R29	FIRST (First Independent Research Support and Transition)
R37	MERIT (Method to Extend Research In Time)
R43	SBIR (Small Business Innovation Research), Phase I
R44	SBIR, Phase II
P01	Program Project
P20	Exploratory Center
P30/50	Center
K01	SERCA (Special Emphasis Research Career Award)
K04	Career Development
U01	Cooperative Agreement

### Selected List of Initial Review Groups

NBSA-B	Neuroscience Behavior and Sociology of Aging (NIA)
BCD-B	Biological and Clinical Aging (NIA)
AGE	Geriatrics Review (NIA)
BEM	Behavioral Medicine (CSR)
EDC	Epidemiology and Disease Control (CSR)
HUD2	Human Development and Aging (CSR)
LCR	Life Course and Preventive Research (NIMH)
NURS	Nursing Research (NINR)
SSP	Social Science and Population (CSR)
SSS	ad hoc Special Study Section
VIS	Visual Sciences (CSR)

## **Office of the Associate Director**

PROJECT NUMBER.....5 P30 AG04590-13

INVESTIGATOR NAME/ADDRESS

ROCKWELL, RICHARD C

INST FOR SOCIAL RESEARCH

P O BOX 1248

ANN ARBOR, MI 48106

AWARD AMOUNT..... \$641,735

PERFORMING ORGANIZATION: UNIVERSITY OF MICHIGAN AT ANN ARBOR

TITLE: FACTORS IN AGING--DEVELOPMENT RESEARCH RESOURCES

ABSTRACT:

The Central Goal of the National Archive of Computerized Data on Aging (NACDA) is to advance research on aging and the aged by helping researchers to profit from the under-exploited potentials of a broad range of data sets. NACDA acquires and preserves data sets relevant to gerontological research, processes them as needed to promote effective research use, disseminates them to researchers, and facilitates their use. By preserving and mailing available the nation's largest library of computer-readable data on aging, NACDA offers opportunities for secondary analysis on major issues of scientific and policy relevance. NACDA also offers summer training courses, provides assistance to researchers in their use of the data sets, participates in meetings of the aging research community, and publishes a topical semi-annual Bulletin as well as an annual Data Collections volume. Funding is sought to continue this work.

Drawing upon the expertise of the NACDA National Advisory Council, substantive Task Groups, and project personnel, these specific aims will be pursued: (1) target, acquire, process, and release data sets relevant to gerontological research, particularly concentrating on underdeveloped substantive areas of the archive such as data for international comparative research; 2) evaluate and utilize the newest technologies for data processing and dissemination, including mailing data sets available over the internet and by CD-ROM; 3) facilitate potential users' knowledge of and access to NACDA's resources and services; and 4) provide technical assistance regarding the content, characteristics, and research applications of selected data collections. In conducting this work, NACDA will benefit from the experience, facilities, and institutional membership network of the inter-university Consortium for Political and Social Research (ICPSR).

## **Cognitive Functioning and Aging**

PROJECT NUMBER.....5 R37 AG05739-12

INVESTIGATOR NAME/ADDRESS  
BALL, KARLENE K  
UNIV OF ALABAMA AT  
BIRMINGHAM  
415 CAMPBELL HALL  
BIRMINGHAM, ALA 35294-1174

AWARD AMOUNT..... \$204,136

PERFORMING ORGANIZATION: UNIVERSITY OF ALABAMA AT BIRMINGHAM  
TITLE: IMPROVEMENT OF VISUAL PROCESSING IN OLDER ADULTS

ABSTRACT:

Many older adults are subject to declines in their ability to function effectively and independently. In particular, sensory, perceptual, and cognitive functions may deteriorate in later life for some individuals, and it is widely believed that these deficits contribute to a decline in the ability to perform everyday activities. While much is now known about cognitive and sensory aging, relatively little is known about the functional consequences of age differences for everyday tasks. Furthermore, relatively little research has been done to aid in the development of interventions designed to prevent, delay, or reverse the disabilities which affect older adults. Past research evaluating the relationships between visual function, attentional function, cognitive function and driving crashes has determined that the Useful Field of View, a composite measure of visual attention, is predictive of the crash frequencies of older drivers, as well as amenable to intervention. The objectives of this project will extend previous work in three areas; 1) Studies will further explore the mechanisms underlying UFOV reduction, and training. These studies will also permit a test of several current competing theories of cognitive aging, and data will be analyzed to determine whether different mechanisms underlie observed deficits within different individuals. For example, based on existing theoretical models, expansion of the UFOV could be the result of a generalized increase in processing speed, an improved ability to switch attention, or improved inhibitory mechanisms. An individual differences approach will be used to determine why training is effective for different people, the specificity of improvements across sensory modalities, and the relationship of improved attentional function to higher cognitive skills such as working memory. 2) Measuring functional visual abilities in the clinic is becoming increasingly important in geriatric optometry because of the concern for predicting which older patients are at risk for functional problems in everyday activities. Previous work has shown that individuals with identical visual sensitivities can have dramatically different abilities on measures such as the UFOV, which is predictive of driving problems. Studies will further explore the contribution of visual function to higher order visual information processing levels by systematically evaluating the impact of degraded visual input on higher level tasks, such as the UFOV, within individuals of known attentional and cognitive ability. This will allow a determination of the interactions between visual function, attention, and overall mental status on functional performance measures. 3) Further studies will be carried out to explore the relationship between sensory and cognitive processes and functional outcome measures such as driving and accidental injuries. We propose to evaluate specific hypotheses concerning the mechanisms underlying difficulty with specific driving tasks (such as turning left) as well as evaluating transfer of training directly to these specific maneuvers. Such studies, aimed at improving visual/cognitive performance in older adults, should further our understanding of basic visual, attentional, and cognitive processes as well as advance our knowledge of the aging process.

PROJECT NUMBER.....5 U01 AG14289-02

INVESTIGATOR NAME/ADDRESS

BALL, KARLENE K  
UNIV. OF ALABAMA  
BIRMINGHAM

AWARD AMOUNT..... \$386,834

415 CAMPBELL HALL  
BIRMINGHAM, AL 35294-1174

PERFORMING ORGANIZATION: UNIVERSITY OF ALABAMA AT BIRMINGHAM  
TITLE: COGNITIVE TRAINING & EVERYDAY COMPETENCE IN THE ELDERLY

ABSTRACT:

DESCRIPTION: Five years of support are requested by the UAB to conduct clinical trials involving cognitive training in elderly persons to see if it improves their everyday competence. The aim of the proposed research is to examine the effects of a cognitive intervention, specifically improvement of processing speed through a set of tasks known as the "Useful Field of View," on the everyday functional abilities of older adults. Several recent reports have described perceptual and cognitive interventions have resulted in the improved functioning of older adults. These measurements include improving their scores on intellectual abilities, processing speed, perceptual abilities, and memory. Previous research has indicated that the training has a positive effect on improving driving performance in older adults. Declines in cognitive functioning (including such measures as speed of processing) have had an adverse effect on activities considered essential to independent living (e.g., working, driving, household and medication management, shopping skills, telephone use, personal financial skills, etc.). Recent studies also indicate that a reduction in these everyday competence tasks is related to increased incidences of hospitalization, need for formal care, and mortality. Since improvement of cognitive function appears to produce improved competence measures, as it has with driving competence, it may also help individuals maintain their personal autonomy. These findings provide the impetus for evaluating a cognitive intervention on a large scale across a broad spectrum of everyday outcome measures. The specific aims of this project are to extend previous work on the speed-of-processing intervention to evaluate its effectiveness in preventing or postponing loss of independence, need for formal care, or other major restrictions in quality of life among older

PROJECT NUMBER.....5 R01 AG13474-02

INVESTIGATOR NAME/ADDRESS

BATES, ELIZABETH A

UNIV OF CALIFORNIA

9500 GILMAN DRIVE

LA JOLLA, CA 92093-0526

AWARD AMOUNT..... \$186,660

PERFORMING ORGANIZATION: UNIVERSITY OF CALIFORNIA SAN DIEGO

TITLE: AGING AND BILINGUALISM

ABSTRACT:

DESCRIPTION (Adapted from Investigator's Abstract): The primary purpose of the proposed research program is to improve the understanding of the effects of normal aging on language processing in bilinguals. In the proposed studies, the investigator will extend new methods and concepts from the literature on aging in monolinguals to the special problems faced by multilingual adults, with emphasis on the potential for between-language interference in fluent comprehension and production. The proposed experiments focus on the interplay between semantic and/or linguistic inhibition, and their contribution to lexical access in and out of a discourse context.

Participants will be Spanish-English bilinguals (elderly bilinguals, and college-age controls under normal and stressed conditions), tested in a series of "on-line" (real time) methods for the assessment of word comprehension and production. All experiments are administered in both Spanish and English. Individuals will be screened to assess language history and language dominance in "off-line" (untimed) and on-line (timed) situations. The proposed on-line tasks will include word repetition (i.e. "auditory naming"), picture naming, picture-word priming, and picture-word Stroop tasks. The investigator's results to date with a subset of these methods suggest that the ability to process words from Language A while listening to Language B is markedly slowed in elderly bilinguals, and in young bilinguals processing the same stimuli under adverse conditions. These laboratory findings have implications for the language switching commonly experienced by bilinguals in daily life. Results will also provide information relevant to competing accounts of cognitive declines in normal aging (based primarily on studies of monolinguals), including slowed or reduced activation, reductions in working memory, and/or a reduced ability to inhibit competing responses that are not relevant to the task.

PROJECT NUMBER.....5 R01 AG13508-02

INVESTIGATOR NAME/ADDRESS  
BERRY, JANE M  
UNIVERSITY OF RICHMOND

AWARD AMOUNT..... \$55,308

RICHMOND, VA 23173

PERFORMING ORGANIZATION: UNIVERSITY OF RICHMOND

TITLE: MEMORY SELF-EFFICACY AND MEMORY PERFORMANCE IN ADULTHOOD

ABSTRACT:

DESCRIPTION: The broad, long-term objective of the proposed research is to further understanding of the relation between memory self-evaluation processes and memory functioning in older adults. The purpose of this research is: 1) to clarify the nature of memory self-efficacy from an integrative framework comprised of life span developmental theory and social cognitive theory, and 2) to specify the predictive utility of memory self-efficacy for memory functioning in adulthood. Memory self-efficacy (MSE) refers to self-evaluative beliefs and judgments of competence and confidence regarding memory abilities, and declines with age. The proposed research tests a model of age, MSE, and memory functioning based on life span developmental psychology. Previous MSE research has used limited measures of memory performance, single estimates of MSE, and has employed correlational designs that do not specify causal links between MSE and memory performance. A second void in MSE research is the relative lack of data regarding the developmental nature of MSE. Most research has employed samples of young and old adults, neglecting middle-aged adults; this void is addressed in the proposed research. Four studies are planned. Study 1 seeks to establish the basic relations between aging to multiple measures of MSE (global, task specific, and single performance predictions) across multiple memory domains (work, text, object location, and paired associate recall). Study 2 will test the relative predictive power of multiple indicators of MSE to measures of task-related effort and memory performance, i.e., the mediation of MSE-MP through task effort. Study 3 tests additional mediating variables of the MSE-MP relationship, including strategy usage and persistence. Study 4 employs a repeated measures, longitudinal design to examine changes in the MSE-MP relationship across multiple trials and over a 3-year interval. Taken together, the studies represent a significant integration of the MSE-MP research on aging from a process-oriented theoretical framework. MSE and MP are multidimensional constructs that must be connected through complex multidimensional task-related thought processes and behaviors. The goal of this research is to identify those processes and whether there are reliable age differences in the relation of process to outcomes on multiple measures of memory functioning. Results from these four studies provide information at basic theoretical and empirical levels regarding memory problems associated with aging. Moreover, the results have significant implications for applied research on memory and aging including memory training and intervention programs for older adults who are distressed over changing or declining memory abilities.

PROJECT NUMBER.....5 R01 AG13969-02

INVESTIGATOR NAME/ADDRESS  
CHARNESS, NEIL H  
FLORIDA STATE UNIVERSITY

AWARD AMOUNT..... \$204,491

TALLAHASSEE, FL 32306-1051

PERFORMING ORGANIZATION: FLORIDA STATE UNIVERSITY

TITLE: LIFE-SPAN EXPERTISE

ABSTRACT:

DESCRIPTION (Adapted from applicant's abstract): The long-term objectives are to identify micro-level cognitive processes and macro-level cultural mechanisms that support the development of high-level skill in problem solving across the life span. A major focus is on the compensatory mechanisms that older adults may use to allow them to maintain high performance levels on difficult problem-solving tasks despite age-related declines in information processing efficiency. Understanding compensatory processes may be instrumental in helping aging adults to cope intelligently with negative changes in physical and mental health, as well as to help maintain the productivity of our aging labor force.

We will focus on expert problem solving in chess, because chess problem solving relies on basic perceptual, attentional, memory, and search processes, enabling it to serve as a model task environment for exploring age trends in cognition in general, and expert problem solving in particular. Further, public records of chess ratings enable population-level analyses of life span and cultural patterns. The following questions form the core concerns of this project: How do chess players acquire and maintain skill in chess across the life span? What types of study and practice patterns do they use? What role does cultural and social factors associated with age, nationality, and gender play in acquiring skill? Can older players compensate for reduced processing efficiency by drawing on acquired knowledge? What types of knowledge support chess expertise? How does the search process, the core component of problem solving in chess, vary with age, skill, and problem difficulty?

We will examine longitudinal chess performance via chess rating lists from the USA and from the World Chess Federation (FIDE). A subset of these players in Germany, Russia, Canada, and the USA will be contracted to participate in the following projects: A) Interviews to gather practicing behavior data, shown to be one of the primary determinants of skill acquisition and maintenance. We will probe social and cultural supports for acquiring and maintaining skill. Follow-up studies will examine practice on-line for a subset of players. B) Chess and non-chess control experiments that will probe the perceptual and cognitive components of skill. Eye-movement studies will trace perceptual matching processes. Time-accuracy functions and think aloud procedures will probe memory and problem solving processes. We will model age and skill effects using EPAM-like computer simulations that vary speed and working memory capacity.

PROJECT NUMBER.....2 T32 AG00029-19

INVESTIGATOR NAME/ADDRESS

COHEN, HARVEY J

DUKE UNIVERSITY

AWARD AMOUNT..... \$249,846

BOX 3003

DURHAM, NC 27710

PERFORMING ORGANIZATION: PENNSYLVANIA STATE UNIVERSITY-UNIV PARK

TITLE: FLUID ABILITY TRAINING AMONG ELDERLY

ABSTRACT:

This postdoctoral research-training program is designed to produce research investigators with career interests in aging. Trainees with basic disciplinary training in biomedical, behavioral and social science disciplines receive specific research training in appropriate laboratories involved in aging research at Duke University. Fellows generally spend two years in training.

We have the faculty and facilities to train fellows in the following areas. Biomedical Research (biochemistry, endocrinology, epidemiology, immunology, neurology, neuroendocrinology, oncology, physiology, pharmacology, psychiatry, radiology and family medicine); Behavioral Research (psychophysiology, neuropsychology, developmental, cognitive, experimental, personality, clinical and social psychology); and Social Science Research (sociology, economics, anthropology, and health services research).

Trainees apply to work in a specific laboratory and spend about 90% of their time in research. Each fellow is integrated into the laboratory of the preceptor, learning research by participating in collaborative and independent research projects. The other major training activity is our weekly seminar series for fellows and faculty which includes a structured series of seminars on multidisciplinary aspects of aging, professional development, research design and data analysis. Auditing courses is available as desired.

Trainees are selected on the basis of a detailed research proposal (with the advice and consent of the faculty sponsor), letters of recommendation, statement of career and training plans, transcripts and a curriculum vita. Most trainees take positions on university faculties or in full-time research settings. Support is requested for eight (8) postdoctoral fellows. About one third of the trainees enter with levels of experience beyond two years.

The primary training facility is the Duke University Center for the Study of Aging and Human Development. Associated faculty is located throughout the University.

PROJECT NUMBER.....1 R43 AG13828-01A2

INVESTIGATOR NAME/ADDRESS

DUSEK, JEFFERY A  
NEW ENGLAND RESEARCH INC  
9 GALEN STREET  
WATERTOWN, MA 02172

AWARD AMOUNT..... \$93,392

PERFORMING ORGANIZATION: NEW ENGLAND RESEARCH INSTITUTES, INC.

TITLE: DEVELOPING A BRIEF, MULTIMODE COGNITIVE INSTRUMENT

ABSTRACT:

Intact cognitive functioning, especially the ability to remember important information and to process information quickly, accurately, and efficiently, is critical for maintaining independent functioning and quality of life in later years of life. Research conducted over the last two decades has suggested that associations exist between cognitive ability and subsequent functional ability, morbidity, health service utilization, and mortality. However, much of this research has employed cognitive instruments, which only differentiate pathological aging from normal aging (e.g., Mini Mental State Examination). Other cognitive instruments (e.g., the Weschler Memory Scale-Revised) are able to make more fine-grained distinctions but are too time-consuming and complex for administration in large-scale surveys. With this SBIR initiative, we intend to fill this void by developing a brief cognitive instrument which 1) assesses two key aspects of cognitive functioning that show significant decrement with aging and strong relations with health and functional status, (2) enables researchers to make distinctions between individuals in the normal range of cognitive functioning, and (3) can be administered over the telephone as well as in face-to-face settings. This proposal, which covers Phase I activities, will encompass two tasks: (1) The development of technology that will enable researchers to collect both accuracy and response latency data over the telephone; (2) pilot testing the instrument by making cross-modal performance comparisons. Phase II will address issues of validity and reliability in more detail.

PROPOSED COMMERCIAL APPLICATION: The instrument we propose to develop is a response to the growing recognition of the importance of cognitive functioning for aging and health. This instrument will increase the predictive value of studies conducted by behavioral scientists and epidemiologists, allowing them to identify key cognitive antecedents to health-related decline.

PROJECT NUMBER.....5 R37 AG03055-16

INVESTIGATOR NAME/ADDRESS

ELIAS, MERRILL F

UNIVERSITY OF MAINE

5742 C LITTLE HALL

ORONO, ME 04469-5742

AWARD AMOUNT..... \$297,930

PERFORMING ORGANIZATION: UNIVERSITY OF MAINE

TITLE: AGE, HYPERTENSION AND INTELLECTIVE PERFORMANCE

ABSTRACT:

The purpose of this project is to continue studies, which are allowing us to obtain a better understanding of the effects of hypertension on WAIS and neuropsychological test measures with advancing age. Continuation of our ongoing longitudinal studies will allow us to: 1) follow subjects, already tested three times, for an additional five years (Time 4 testing); 2) perform Time 3 testing for subjects tested initially during the 1981-1984 grant period; 3) perform Time 2 testing for subjects tested initially during the 1985-1990 grant period; 4) expand the number of subjects in our overall cross-sectional design.

The objective is to characterize age-related changes over time in cognitive functioning as affected by hypertension. We are particularly interested in change over time and levels of performance as predicted by: (1) unmedicated baseline systolic and diastolic blood pressure levels (across the full range and within the normal or untreated range) (2) as a function of diagnostic category; severe; less severe; normotensive. Change over time is analyzed by comparing different mathematical (statistical) models for "individual change." The question here is whether different dynamic models for characterizing change hold equally well for hypertensive and normotensive individuals and for fluid, speed, memory, and crystallized components of intellect. Recent factor analytic studies of the WAIS indicate that this four-component model reflects the relationship among subtests more accurately than does the traditional Verbal-Performance test model. Subtest composition of the four components is as follows: 1) Fluid (Block Design, Picture Completion, Picture Arrangement, Object Assembly); 2) Psychomotor Speed (Digit Symbol); 3) Memory or Short-Term Retrieval (Arithmetic, Digit Span); and 4) Crystallized (Information, Comprehension, Similarities, Vocabulary). Analyses employing the Verbal-Performance model will also be conducted for purposes of comparability with existing literature.

The study is guided by a hypothetical "pathophysiology construct" in which vascular and metabolic effects are seen as producing accelerated change in cognitive functioning over time. Our data (and the data of others) suggest that hypertension unmedicated blood pressures at baseline are the best markers of severity.

PROJECT NUMBER.....2 K01 AG00646-03

INVESTIGATOR NAME/ADDRESS

ELIAS, PENELOPE K  
STATISTICAL & CONSULTING  
UNIT

AWARD AMOUNT..... \$101,596

111 CUMMINGTON STREET  
BOSTON, MA 02215

PERFORMING ORGANIZATION: BOSTON UNIVERSITY

TITLE: AGE, HYPERTENSION, AND COGNITIVE FUNCTIONING

ABSTRACT:

The overall objective is to provide the PI with training in methodological and statistical approaches used in epidemiological research and in the medical and behavioral implications of chronic diseases in order to prepare her for an independent research career in the areas of cardiovascular and cerebrovascular diseases, aging, and behavior. The specific research objectives during the continuation period are: (1) to assess the risk of poor cognitive performance associated with coronary heart disease and to test whether this risk remains the same when blood pressure levels (or chronic hypertension) are statistically controlled; (2) to assess the risk of poor cognitive performance associated with cerebrovascular disease and to test whether this risk remains the same when blood pressure levels (or chronic hypertension) are statistically controlled; (3) to test the Waldstein [1995] model which predicts that young and elderly adults will be more cognitively disadvantaged by hypertension than middle-aged persons; (4) to test the generalizability of our previous findings with the Framingham Heart Study population to another study population. Multiple linear and logistic regression and factor analysis will be the major analytic tools. Chronic disease contributes significantly to cognitive decline in cognitive functioning, diminishing the quality of life. It is important to determine the epidemiological significance of these processes from a behavioral as well as a medical standpoint as both are important for healthy functioning in older individuals.

PROJECT NUMBER.....5 R01 AG06268-05

INVESTIGATOR NAME/ADDRESS

ERBER, JOAN T

FLORIDA INTERNATIONAL UNIV

UNIVERSITY PARK CAMPUS DM

AWARD AMOUNT..... \$110,777

430

MIAMI, FL 33199

PERFORMING ORGANIZATION: FLORIDA INTERNATIONAL UNIVERSITY

TITLE: AGE AND MEMORY IN PERCEPTIONS OF COGNITIVE CAPABILITY

ABSTRACT:

The proposed research investigates perceivers' impressions/perceptions about the cognitive capability of targets. Such impressions (perceptions) are expected to have behavioral implications resulting in differential task opportunities provided to targets of varying ages. A person-perception paradigm will be employed which varies the age (young, middle-aged, old), degree of forgetfulness (high, moderate, or none), and type (semantic vs. episodic) of forgetting experienced by male and female targets being interviewed by the supervisor of a volunteer program. After listening to a tape-recorded interview, young, middle-aged, and old male and female subjects will rate how they, in the role of supervisor, would behave toward the target in terms of assigning tasks of varying complexity. The model on which the proposed studies are based predicts that nonforgetful targets will be considered highly capable (and thus receive high task assignment ratings), regardless of their age; highly forgetful targets will be considered incapable regardless of their age. However, young and old (and possibly middle-aged) subjects will use an age-based double standard in judging the capability of moderately forgetful targets: old (and possibly middle-aged) targets will be perceived as less capable than young targets. Two factors that could ameliorate negative impressions of forgetful targets will be investigated: a target's explanation for forgetting and someone else's evaluation of a target's positive personal traits (e.g., conscientiousness). It is predicted that an explanation attributing forgetfulness to an external cause will modify perceivers' impressions regardless of target age, but an explanation involving internal attribution will result in less modification, particularly in middle-aged and older targets. The extent to which a target's alleged personal traits modify perceivers' impressions of that target's capability will depend upon the target's age and degree of forgetfulness.

PROJECT NUMBER.....5 R01 AG07654-09

INVESTIGATOR NAME/ADDRESS  
FISK, ARTHUR D  
GA INST OF TECHNOLOGY

AWARD AMOUNT..... \$151,178

ATLANTA, GA 30332-0170

PERFORMING ORGANIZATION: GEORGIA INSTITUTE OF TECHNOLOGY  
TITLE: AUTOMATIC AND CONTROLLED PROCESSING AND AGING

ABSTRACT:

The proposed research is a continuation and logical extension of research initiated under a previous grant. The overarching objective of this program of research is to understand the moderating influences of skill acquisition (e.g., consistency, task structure, learning requirements, amount of practice) as they relate to models developed to describe and predict the influences of aging on performance improvement and learning underlying the acquisition of skill. This program of research has been success in delineating age-related performance improvement and learning underlying acquired skills for several task domains. However, a major gap in the literature concerns long-term retention of acquired knowledge and acquired skills. Indeed, the literature paints a confused picture of age-related retention effects. It is an understanding of this question, which will add closure to our investigation of age-related differences in automatic and strategic components of skill acquisition. From a theoretical as well as practical perspective it is critical to have accurate information about how skills and knowledge decay during periods of disuse. The major aims of the current research effort include the following: (1) To develop a general theoretical framework predicting retention of performance as a function of the underlying components of the acquired skill, the length of the retention interval, intervening activities, and age. (2) To understand how the interactions of age, retention interval, and component processes change as the acquired skill increases in complexity. (3) To understand the possible interaction of retention characteristics of strategic and automatic aspects of skill from an age-related perspective. In a related issue, to understand if retention characteristics are domain-specific; that is, dependent on idiosyncratic relations that a person can develop for component processes supporting the skill, or are the characteristics more general as indicated by support of a domain independent model. (4) Develop an understanding of the relationship between age-related characteristics of acquisition and retention of acquired skill. That is, is an age-related model of skill acquisition also capable of predicting retention capability or must acquisition and retention be considered independent factors?

PROJECT NUMBER.....1 R43 AG14598-01

INVESTIGATOR NAME/ADDRESS  
GADBERRY, SHARON L  
TRANSITIONS MANAGEMENT  
GROUP  
220 SANSOME STREET #1400  
SAN FRANCISCO, CA 94104

AWARD AMOUNT..... \$100,000

PERFORMING ORGANIZATION: TRANSITIONS MANAGEMENT GROUP  
TITLE: VIDEO JOB INTERVIEW TRAINING FOR OLDER DISLOCATED WORKER

ABSTRACT:

This project will produce and evaluate a video-based training program for enhancing interviewing skills for older dislocated workers. Continuing downsizing disproportionately affect older workers, resulting in long-term unemployment and underemployment. Job interviewing confidence and skills, as well as age discrimination, are frequently cited problems. The proposed instruction is unique in that it can be implemented either independently or in a group training setting and includes specific strategies for countering age-related stereotypes.

In Phase I, a 30-minute video will be produced, along with a written manual and audiotape. The video features a panel of experts, commenting on actors modeling interview behaviors in a variety of settings. Through representative samples, each segment will demonstrate do's and don'ts of interviews which cross blue collar, clerical, managerial, gender and ethnic lines. Participants rehearse their own responses to the video interviewer's cues. A randomized outcome study will be conducted with 80 older dislocated workers, to test the efficacy of the training program. In Phase II, written and video components will be combined and expanded into an interactive multi-media program to be delivered over Internet or CD-ROM.

PROPOSED COMMERCIAL APPLICATION: Currently, audiovisual materials are unavailable for training older workers for successful job searches. These materials will be distributed to the numerous organizations that train older job seekers: State Employment Development departments, Federal One-Stop Job Training Centers, and non-profit foundations and support groups. For-profit outplacement firms, as well as corporate career centers, are also a market for these materials. The multi-media product crated in Phase II is deliverable over the Internet or as a CD-ROM, expanding the market to libraries, and to individuals with home computers.

PROJECT NUMBER.....1 R43 AG14602-01

INVESTIGATOR NAME/ADDRESS

GOYAL, RAVE

BIO MED & NEURO-RESEARCH

INC

AWARD AMOUNT..... \$100,000

4804 ASTERIA STREET

TORRANCE, CA 90503

PERFORMING ORGANIZATION: BIOMED AND NEURO-RESEARCH, INC.

TITLE: DEVICE FOR AIDING MEMORY DYSFUNCTION IN ELDERLY

ABSTRACT:

DESCRIPTION (Investigator's Abstract): As demographics of the North American population change, there is a critical need to provide convenience items which can improve the safety and functioning of the elderly. There is a rising rash of incidents where elderly citizens have been injured or have put themselves at risk, because they are not able to recollect/ retrieve items necessary for their day-to-day activities. A growing number of senior citizens and their care providers are becoming aware of the burdens, which come with memory loss and the resulting inability to function.

This Phase I, SBIR application proposes to develop an audible lost item retrieval product suitable for home consumer applications. Based on incident RF energy, a tiny receiver can emit an audible tone to locate the medical or convenience items. The unit can be inconspicuously mounted on consumer or medical devices, e.g. prescription glasses, medication containers, keys etc. If misplaced, these items can be polled using remote locating transponders similar to TV remote controls.

A prototype unit will be build in Phase I to demonstrate concepts and to develop consumer attributes through field trials. In Phase II, they will develop miniaturization concepts to make this a practical unit for home use.

PROJECT NUMBER.....2 R37 AG04306-12

INVESTIGATOR NAME/ADDRESS

HASHER, LYNN A  
DUKE UNIVERSITY  
BOX 90085  
DURHAM, NC 27708

AWARD AMOUNT..... \$320,765

PERFORMING ORGANIZATION: DUKE UNIVERSITY

TITLE: AGE, INHIBITION, AND THE CONTENTS OF WORKING MEMORY

ABSTRACT:

DESCRIPTION (adapted from investigator's abstract): The research explores age similarities and differences in control over thought and action on the assumption that basic attentional mechanisms that control the contents of working memory play a major role in determining high level cognition. The work evaluates a theoretical model (e.g., Hasher, Zacks & May, in press) that proposes that the critical attentional mechanisms involved in inhibiting irrelevant or no longer relevant thoughts and actions are, on average, less efficient in older than younger adults. Two broad issues are at the center of the present series of studies: (1) age related differences in inhibitory and possible similarities in noninhibitory control processes that determine the contents of working memory; (2) the consequences for retrieval of age differences in control over the momentary contents of working memory.

Age differences in retrieval are expected to be larger for older adults than for younger adults because of reductions in inhibitory control over the contents of working memory. This will create more "cluttered" bundles of information in memory and the clutter, comprised of relevant target information, along with irrelevant distraction, will either decrease the chances of finding a target in memory or slow access greatly. Several experiments address these predictions and go beyond to establish the existence of organizational devices that can (a) reduce clutter and so (b) diminish the competition at retrieval between relevant and irrelevant information that is otherwise present for those with reduced inhibitory control over the contents of working memory. The use of such organizational devices should help to reduce memory lapses in older adults.

Recent work suggests the existence of at least one noninhibitory process that may help to limit clutter in working memory: the semantic context in which individual words occur. It is possible, in contrast to some views of language processing, that meaning activation is quite narrow in natural language situations such as reading. The prediction pursued here is that younger and older adults will not differ in their ability to use this noninhibitory route to narrow meaning activation and so to control the contents of working memory. Findings from this line of work will help to establish boundary conditions for the role of inhibitory processes in controlling thought and action and they might help to foster the development of environmental conditions that would enable older adults to maintain high levels of cognitive functioning in their chosen environment.

PROJECT NUMBER.....2 R01 AG05552-10A2

INVESTIGATOR NAME/ADDRESS

HESS, THOMAS M

NORTH CAROLINA STATE UNIV

BOX 7801

RALEIGH, N C 27695-7801

AWARD AMOUNT..... \$127,464

PERFORMING ORGANIZATION: NORTH CAROLINA STATE UNIVERSITY RALEIGH

TITLE: SOCIAL COGNITION AND AGING

ABSTRACT:

This research examines aging-related changes in cognitive functioning, with the goal of understanding how different-aged adults represent information acquired in social contexts and then use this information in making decisions. It is assumed that the ability to acquire and accurately represent information from social contexts is an important predictor of adaptive functioning. Much information relating to everyday functioning (e.g., medical, financial, consumer) is transmitted through interactions with others (e.g., Physicians, financial planners, salespersons). Thus, it is important to understand the impact that aging might have on reasoning in such contexts. In this research, two broad categories of aging-related influences on social-cognitive functioning are identified. The first has to do with basic cognitive processes. It is assumed that aging is associated with a decline in such processes, as reflected in decreases in the efficiency with which older adults can control attention and operate on information in memory. It is hypothesized that such changes lead to: (a) a reduction in the ability to accurately encode information transmitted in social interchanges; and (b) an increase in biases associated with nonconscious processes that operate in such situations. The second influence has to do with motivational factors associated with aging-related changes in life circumstances. It is hypothesized that increasing age is associated with changes in cognitive goals which, in turn, influence the attention devoted to information sources and the degree of engagement in cognitive activity. In this research, adults aged from 20 to 80 will be tested in laboratory analogues of social situations to examine the impact to these two types of influences on representation and decision making. Experiments will be conducted in which specific age-related factors are isolated and manipulated in order to gauge their impact on performance. Observed age-related differences will also be examined in relation to ability, health, and other contextual factors in order to better understand potential causal mechanisms. The long-term goal is the development of a model that will describe aging effects on social cognition and provide prescriptions for dealing with potential problems.

PROJECT NUMBER.....5 R01 AG09936-05

INVESTIGATOR NAME/ADDRESS  
HORN, JOHN L  
UNIV OF SOUTHERN CALIFORNIA  
UNIVERSITY PARK, MC 1061  
LOS ANGELES, CA 90089-1061

AWARD AMOUNT..... \$137,861

PERFORMING ORGANIZATION: UNIVERSITY OF SOUTHERN CALIFORNIA  
TITLE: CAUSES IN ADULT DEVELOPMENT OF DIFFERENCES IN ABILITIES

ABSTRACT:

This research will yield an improved description and understanding of individual differences in the ways in which mature adults describe the controls in their lives, their life styles, their use of substances and the effects this use has on cognitive development. The focus is on a period of development that extends from 40 to 80 years of age. This is a reservoir for effects accumulating from previous periods, and a time in which important features of a person are likely to change. Four cross-sectional studies will be done using exploratory and confirmatory analyses with samples of subjects and variables that are large enough to ensure dependability and generality of findings. New Measures are to be developed; models are to be constructed to establish how beliefs about control relate to patterns of lifestyle that involve attitudes and behaviors pertaining to maintenance of health and physical fitness, use of leisure time, involvement in vocations and avocations, and activities pertaining to use of alcohol, stress control and self control. Analyses to verify control/lifestyle models will indicate how different patterns of use of alcohol operate in combinations with other determiners of adulthood changes in cognitive capabilities. The results will show the extent to which adulthood declines in vulnerable cognitive abilities, principally fluid reasoning and short-term apprehension and retrieval, are associated with, and independent of, the different lifestyles. The results will also indicate how enhancements in maintained abilities-crystallized knowledge and retrieval of this knowledge-- are related to lifestyles and beliefs about self-improvement. An improved evidence--based scientific theory about intellectual development will be derived. Scale construction results will provide a basis for further research on lifestyles & beliefs about controls in mature adults. Studies of data- analysis methods, as such, are expected to yield improvements in understanding inference in psychological research and the use of modeling methods with developmental data.

PROJECT NUMBER.....5 R01 AG11451-05

INVESTIGATOR NAME/ADDRESS

HOYER, WILLIAM J

SYRACUSE UNIVERSITY

430 HUNTINGTON HALL

SYRACUSE, NY 13244-2340

AWARD AMOUNT..... \$137,383

PERFORMING ORGANIZATION: SYRACUSE UNIVERSITY AT SYRACUSE

TITLE: AGING OF VISUAL-COGNITIVE MECHANISMS

ABSTRACT:

DESCRIPTION (Adapted from Investigator's Abstract): The experiments proposed in this application build upon and extend research initiated under a previous grant aimed at developing and testing empirically derived neural network models of aging. The major aim is to specify the mechanisms that account for age-related differences in practice-related improvements in learning and skilled performance. Our focus is on the description of age-related inter-individual differences in learning and skill acquisition in terms of the efficiency of a memory-based learning mechanism and the efficiency of computing algorithmic solutions. That is, which mechanism of learning are degraded and which mechanisms of skilled performance are preserved across the adult life span? During the four years of this project, about 400 women and men between the ages of 20 and 70 years will be tested in four experiments, to examine session-by-session changes in the speed, variability, and accuracy of performance, as well as changes in the shape of the distributions of response times. Analyses of age-related individual differences along these measures across multiple practice sessions are expected to reveal shifts from algorithmic computation to memory based processing.

PROJECT NUMBER.....5 R01 AG08235-07

INVESTIGATOR NAME/ADDRESS  
HULTSCH, DAVID

AWARD AMOUNT..... \$136,028

UNIVERSITY OF VICTORIA  
MS7525, PO BOX 3050  
VICTORIA, BC V8W 3P5 CANADA'

PERFORMING ORGANIZATION: UNIVERSITY OF VICTORIA

TITLE: INDIVIDUAL DIFFERENCES IN MEMORY CHANGE IN THE AGED

ABSTRACT:

The broad objective of the present proposal is to examine changes in memory functioning in later life. The research is based on the hypothesis that changes in memory performance may depend substantially on individual differences in the decline of information processing and intellectual ability components underlying the complex tasks typically used to measure memory. From this perspective, age-related declines in memory cannot be expected for all older adults, but only for those individuals who have experienced sufficient decline in the components necessary for successful task performance. The study is also designed to examine three potential mediators of this differential decline of processes and abilities. In particular, we are interested in examining whether memory is relatively spared from decline among individuals with (a) better self-reported health, (b) greater participation in cognitively demanding everyday activities, and (c) higher levels of self-efficacy in memory-demanding situations.

The research is based on an ongoing longitudinal-sequential study of older adults. In the design plan, participants in each of the sequences are tested at three-year intervals, with new independent samples added at six-year intervals. To date, Sample 1 has been tested three times over 6 years (1986, n = 484; 1989, n = 330; 1992, n = 243). A fourth testing of this sample is scheduled in 1995. Sample 2 (n = 530) was tested for the first time in 1992-93. The present proposal is for the second testing of Sample 2 and the fifth testing of Sample 1. The test battery is designed to measure three broad groups of variables: (a) memory variables including indicators of episodic (word and text recall), semantic (fact recall) and implicit (stem completion) memory; (b) cognitive variables including experimentally-based information processing components (reaction time, perceptual speed, verbal processing speed, working memory), and psychometrically-based abilities (inductive reasoning, verbal fluency, vocabulary, reading comprehension); and (c) non-cognitive variables including health status, activity life style, metacognition, and aspects of personality.

In sum, the proposed research is designed to examine: (a) the extent to which age-related changes in memory functioning result from a pattern of differential decline of component information processing and intellectual abilities, and (b) the extent to which patterns of cognitive change in adulthood are mediated by physical health, activity life style, and personal belief variables.

PROJECT NUMBER.....5 T32 AG00226-02

INVESTIGATOR NAME/ADDRESS  
KEMPER, SUSAN  
UNIV OF KANSAS  
4089 DOLE HUMAN DEV CT  
LAWRENCE, KS 66045

AWARD AMOUNT..... \$124,568

PERFORMING ORGANIZATION: UNIVERSITY OF KANSAS LAWRENCE  
TITLE: RESEARCH TRAINING PROGRAM IN COMMUNICATION AND AGING

ABSTRACT:

The communication skills of older adults can decline as the result of normal aging processes as well as sensory changes and adverse health. Because of the potential impact of communication declines on the successful functioning of older adults, the next generation of researchers has multidisciplinary training in gerontology, psycholinguistics, communication studies, and speech/hearing sciences to understand and alleviate the communication problems of older adults. The proposed Research Training Program in Communication and Aging is designed to take advantage of the exceptional concentration of faculty at the University of Kansas convergent research and teaching interest in communication and aging. **Training Program.** Trainee requirements center on a research apprenticeship; trainee participation in a research proseminar, and trainee research dissemination activities round out the training program. The training program also requires four tiers of theoretical and methodological preparation: (1) Each trainee will receive basic training in psycholinguistics, communication studies, and speech/hearing sciences through course work and graduate seminars. (2) Advanced specialized training will be provided by a series of tutorials and workshops, which will provide a multidisciplinary foundation linking these areas within a common framework. (3) Each trainee will complete a sequence of statistical and methodological courses to ensure mastery of these essential skills. (4) Each trainee will complete a sequence of courses and seminars in gerontology. **Trainees.** The Communication and Aging Training Program will accommodate five pre-doctoral trainees and three post-doctoral trainees. Predoctoral trainees will be engaged in Ph.D. studies in Psychology, Communication Studies, Speech-Language-Hearing or a related discipline. Post-doctoral trainees will hold Ph.D.s in these disciplines or related fields. **Training Facilities.** The Training Program will draw upon the expertise and established research programs of 4 core faculty members and 13 faculty associates from the Departments of Psychology, Communication Studies, Speech-Language-Hearing, Sociology, and Linguistics as well as from the KU Gerontology Center and the KUMC Center on Aging. The resources of these departments and centers and the Life Span Institute, the Speech and hearing Laboratories, the Graduate Concentration in Gerontology, and the graduate Program in Child Language are available to trainees.

PROJECT NUMBER.....7 R43 AG14316-02

INVESTIGATOR NAME/ADDRESS

KENNEDY, ROBERT S

STAR MOUNTAIN INC

AWARD AMOUNT..... \$99,894

3601 EISENHOWER AVE

ALEXANDRIA, VA 22304

PERFORMING ORGANIZATION: STAR MOUNTAIN, INC.

TITLE: PERCEPTUAL CORRELATES OF REAR-END COLLISIONS AND AGE

ABSTRACT:

Every year in the U.S., more than 1.5 million rear-end car accidents occur, injuring over 500,000 people. In order to identify, study, and train the visual and perceptual functions related to these accidents, we propose to develop a computerized test battery. The tasks in the battery will require the detection, judgment, and manual control of (a) motion in depth, (b) transverse movement in depth, (c) self-motion, and (d) light signals. From previous research, we believe that it is the combination and interaction of stimulus elements that accounts for significant variance in performance, above and beyond that accounted for by the individual elements alone. Through a graded progression in fidelity from single tasks to a complex driving simulation, it will be possible to (a) identify the critical performance elements involved in this aspect of the driving task, (b) identify those task elements that are most affected by age and gender, and (c) select those perceptual-motor tasks that appear most promising for modification through training. The proposed apparatus will be useful for driver testing, licensing, and training, and it will help to converge and extend previously unrelated findings from different areas of psychology.

PROPOSED COMMERCIAL APPLICATION: We believe that the proposed battery of tests will find a wide market among those involved in driving research, driver testing, and driver training. In particular, we expect the device to complement existing driver assessment and training devices. Other areas of application for which the proposed device promises commercial potential include testing and licensing in aviation and other complex vehicular control tasks, as well as roadside testing of basic driving abilities and accident investigation.

PROJECT NUMBER.....5 R01 AG11851-03

INVESTIGATOR NAME/ADDRESS

KIRSH, DAVID

UNIV OF CALIFORNIA

AWARD AMOUNT..... \$149,011

9500 GILMAN DR

LA JOLLA, CA 92093-0515

PERFORMING ORGANIZATION: UNIVERSITY OF CALIFORNIA SAN DIEGO

TITLE: COMPUTATIONAL STUDY OF COMPENSATION

ABSTRACT:

The proposed research is aimed at expanding our knowledge of how people compensate for their cognitive limitations, particularly as they age. Many actions are best understood as compensatory, they are undertaken because they reduce the memory and computational demands agents must cope with if they are to succeed at their tasks. Our current research on college age students suggests that such compensations occur even in environments, such as computer arcade games, where quick response is required. We hypothesize that: (1) careful empirical and theoretical study will reveal that older people also perform compensatory actions in fast paced environments to reduce internal cognitive demands; (2) compensations spontaneously develop, although they may also be taught; (3) the differential value of compensations teaches us about the relation between computational strategies and cognitive architectures. To test our hypotheses we shall run experiments and construct computer models to simulate the consequences of lesioning key capacities. The primary experimental task is Tetris, a fast paced computer game that involves making quick decisions about rotating and translating simple shapes related to shapes described in the literature on mental rotation. We have constructed a special computational environment for automatically collecting Tetris data at millisecond levels and for creating arbitrary Tetris stimuli. Experiment I examines if the tendency to rotate video shapes in the world, rather than rotate images of them in the head -- a valuable compensatory strategy -- is a tendency that crosses age and motor performance. Experiment II examines if older subjects learn more slowly than young subjects and if their learning rate is sensitive to the initial pace of the game. Additional study of age-related performance will reveal if there are statistically significant differences in the style of play, such as, the average time to first touch the keys, average number of extra rotations, average drop height, percentage of zoids dropped, and so on.

Experiment III tests if real time compensating strategies can be learned from explicit instruction. Experiment IV explores via simulations the question whether certain cognitive architectures are more robust to the cognitive deficits typical of aging. We study how the selective control of resources differentially effects performance in each of the models we shall build. In Experiment V we use experiment and theoretical analysis to discover if there are domain specific categories and concepts that human experts operate with in playing Tetris. In Experiment VI we confirm the general idea that interactive, compensatory strategies, outside the Tetris domain, can help agents improve performance, by observing if subjects can recognize letters from randomly oriented parts of those letters faster if they are allowed to rotate those parts. The relevance to health and the aging is that the more we understand how deficits can be compensated for the better we can design user friendly environments and devices for the aged; calibrate the workplace to keep pace with declining capacities, and teach the aged and cognitively limited to compensate for

PROJECT NUMBER.....5 R01 AG12203-03

INVESTIGATOR NAME/ADDRESS

KRAMER, ARTHUR F

UNIVERSITY OF ILLINOIS

603 EAST DANIEL STREET

CHAMPAIGN, IL 61820

AWARD AMOUNT..... \$153,689

PERFORMING ORGANIZATION: UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN

TITLE: COGNITIVE PLASTICITY AND AGING--DUAL-TASK TRAINING EFFECTS

ABSTRACT:

There has been a conspicuous absence of research directed to the question of whether older adults have the capability to improve their dual-task performance through practice and training, and whether such improvements might parallel those exhibited for younger adults or instead narrow or eliminate the age-related gap in dual-task performance. It is this question which forms the basis of our research program on the influence of training strategies on the learning, transfer and retention of dual-task processing skills for young and elderly adults.

The major aims of our research program include the following: (1) To examine the hypothesis that training strategies, such as variable priority training (Gopher, in press), which emphasize the flexible coordination among two or more tasks in multi-task settings, will enhance the rate of learning and level of mastery exhibited on trained tasks as well as the retention of performance over extended periods of time. Furthermore, we predict that such training strategies are uniquely suited for older adults given their demonstrated difficulties in metacognitive skills such as self-monitoring and information. Thus, we predict a reduction in age-related dual-task performance differences with the use of variable priority training strategies. (2) To examine the hypothesis that dual-task training, particularly with variable priority training strategies, will lead to the improvement in a number of aspects of processing including the automatization of the trained tasks, the improvement in the efficiency of dual-task processing strategies such as time-sharing and time-switching, and improvements in the efficiency of elementary processes relevant to dual-task performance such as perceptual speed, working memory, and various attentional processes. (3) To examine the hypothesis that the scheduling of performance feedback, in the form of adaptively fading feedback with practice, will enhance the transfer and retention of dual-task processing skills and reduce the age-related decrement in dual-task performance. To test this hypothesis we will adapt some of the feedback scheduling techniques that have been successfully used in the motor and verbal learning literatures to the arena of dual-task processing.

PROJECT NUMBER.....2 R01 AG09203-06A1

INVESTIGATOR NAME/ADDRESS

LABOUVIE-VIEF, GISELA

WAYNE STATE UNIVERSITY

71 WEST WARREN

DETROIT, MI 48202

AWARD AMOUNT..... \$356,129

PERFORMING ORGANIZATION: WAYNE STATE UNIVERSITY

TITLE: COGNITIVE EMOTIONAL MATURITY IN ADULTHOOD AND AGING

ABSTRACT:

DESCRIPTION (adapted from investigator's abstract): This sequential-longitudinal investigation extends an examination of patterns of cognitive-emotional development across the life span. Research conducted thus far during the initial project period has provided evidence for two psychological components of adult socioemotional development: reflective cognition and maturation of coping. Each is associated with somewhat different predictors/mechanisms: reflective cognition reflects the effects of education and acculturation, while maturity of coping/defense mechanisms reflects a secure relationship history. However the extent to which older Individual performance reflects age or cohort, and the extent to which they reflect flexible affect modulation versus inflexible affect inhibition, remains to be demonstrated.

To examine these questions, a longitudinal sample of 330 individuals will be recontracted year 2 of the project. The resulting estimated 300 participants will be distributed over seven age groups from 15 to 93 years, with nearly equal numbers of males and females in each age group. Individuals will respond to cognitive and, socioemotional context and outcome measures. In addition, a subsample (N=150) of the original sample will be selected for an in-depth interview during which measures of physiological reactivity and facial expression of emotion will be interfaced with self-assessments (self-reports) of emotional reactivity. Finally, a new subsample of 154 African-Americans will be matched in age, gender and education to this longitudinal subsample.

Analyses will examine the following issues: (a) if age gradients reported so far generalize across time; (b) if changes in reflective cognition and maturity are related to different predictor variables; (c) the degree to which study variables are related to survival; and (d) if the structural models so far established generalizes across time and cultural group; (e) age related differences in affect expression and affect repression/inhibition and (f) if affect repression/inhibition is involved in maintaining a sense of well-being and apparently good coping especially in older individuals.

PROJECT NUMBER.....5 R44 AG09907-04

INVESTIGATOR NAME/ADDRESS

LERNER, NEIL D

WESTAT

AWARD AMOUNT..... \$133,433

1650 RESEARCH BLVD

ROCKVILLE, MD 20850

PERFORMING ORGANIZATION: COMSIS CORPORATION

TITLE: INTEGRATED CLIMBING/REACHING PRODUCT FOR THE ELDERLY

ABSTRACT:

Reaching and manipulating things above normal reach height is important for independent living, especially for many elderly because of reduced functional reach heights. Yet, current products (e.g., step stools) are poorly designed to meet the needs of many elderly and themselves present a fall hazard that could result in injury and greater needs for assistive care. This project will develop more appropriate reaching aids and climbing devices and integrate them into a single product that will be easier and safer to use without assistance.

The project will develop a commercially viable product(s) for the elderly that will significantly enhance safety, and independence. It is based on design criteria, developed in Phase 1, which address the capabilities and needs of older users as the present inadequate products do not. The proposed products are two step stool designs, reach features, and other features designed for an integrated climbing/reaching product. The proposed product(s) will be marketable to elderly with a wide range of capabilities, and addresses a concern recognized by both elderly and family caregivers.

PROJECT NUMBER.....1 R01 AG13642-01A1

INVESTIGATOR NAME/ADDRESS

LI, GUOHUA

JOHNS HOPKINS UNIVERSITY

MARBURG B194

BALTIMORE, MD 21287-2080

AWARD AMOUNT..... \$244,226

PERFORMING ORGANIZATION: JOHNS HOPKINS UNIVERSITY

TITLE: PILOT AGING AND AVIATION SAFETY

The broad, long-term objectives of this proposal are to better understand the effects of aging on pilot performance and to improve aviation safety. The specific aims are (1) to examine the relationship between aging and the risk of pilot involvement in aviation crashes; (2) to examine the relationship between aging and the risk of pilot involvement in aviation violations; (3) **to examine the relationships between psychosocial scales as measured by the Job Content Instrument, and health status and safety performance, including involvement in aviation crashes and violations;** (4) to examine the role of medical conditions in aviation crashes and violations in the process of aging and assess the effectiveness of the current medical standards for Class I pilots in detecting medical and psychosocial factors influencing pilot performance; and (5) to disseminate the results in scientific and public communities and make relevant policy recommendations.

Federal Air Regulations mandate retirement at age 60 years for all major airline (Part 121) pilots. Since its establishment in 1960, this "age-60 rule" has been the subject of continuing research and controversy because of the many political, economic, and safety concerns. Previous studies conducted under controlled experimental conditions have examined the effects of aging on pilot performance based on psychological measures such as cognitive, sensory, and psychomotor skills. Few observational studies have examined the association of pilot age with the risk of crashes and violations. Using a cohort design, this project will follow up for 12 years a random sample of U.S. commuter air carrier and air taxi pilots (Part 135) with Class I medical certificates whose ages were 45-49 years (n=1,500) or 50-54 years (n=1,500) in 1988. Longitudinal data on demographics, medical conditions, flight experience, exposure to flight, psychosocial factors, and aviation crash and violation records will be collected through repeated interview surveys, medical certificate records, and the airmen and crash surveillance systems of the Federal Aviation Administration and the National Transportation Safety Board. The primary hypotheses are **that pilot age and job strain are independently associated with significantly increased risks of involvement in aviation crashes and violations and development of disqualifying medical conditions, and that the relationships between pilot age, job strain and safety performance can be modified by flight experience.** In addition, the role of age-related medical conditions in aviation crashes and the effectiveness of the current medical standards for Class I pilots will be examined. The results of this project can provide the needed scientific data for reassessing and modifying the "age-60 rule" and the current medical standards, and will be useful for developing intervention programs for improving aviation safety.

PROJECT NUMBER.....2 R01 AG09755-07

INVESTIGATOR NAME/ADDRESS

MACKAY, DONALD G

UNIVERSITY OF CALIFORNIA

BOX 951563, 156304

LOS ANGELES, CA 90095-1563

AWARD AMOUNT..... \$394,406

PERFORMING ORGANIZATION: UNIVERSITY OF CALIFORNIA LOS ANGELES

TITLE: ORIGIN OF COGNITIVE PROCESSES IN OLD AGE

ABSTRACT:

This project will identify basic mechanisms underlying age-related changes in languages - and sequencing in behavior. The experiments test two general accounts of cognitive aging, Transmission Deficit hypothesis and the Inhibitory Deficit hypothesis, and promise to fill in our knowledge regarding relations between aging and comprehension, conceptual error detection, word retrieval, speech errors, and other aspects of language production. The main long-term goal is to help develop well specified theories of aging that apply to a broad spectrum of cognitive performance, and address applied issues related to why older adults commonly experience difficulty in retrieving information, producing speech, and encoding new information in everyday life. Unlike previous approaches focusing primarily on cognitive declines, this project also examines cases where older adults: are predicted to exhibit superior performance to young adults. Five sets of experiments are proposed. Experiments 1-5 investigate effects of aging on the on-line perception of phonology. Experiments 6-8 examine age-linked changes in the ability to encode words and sentences under time pressure. Experiments 7-14 compare effects of aging for participants carrying out directly comparable perception versus production tasks in order to understand age-linked asymmetries between language production and perception, e.g., age-linked declines in word retrieval versus robust comprehension of the same words. Experiments 15-17 are the first to explore effects of aging on the extremely general problem of serial order in the organization of behavior. Experiments 18-23 examine effects of aging on miscomprehensions and the ability to detect conceptual errors.

PROJECT NUMBER.....5 U01 AG14276-02

INVESTIGATOR NAME/ADDRESS

MARSISKE, MICHAEL

WAYNE STATE UNIVERSITY

87 E FERRY ROOM 226

DETROIT, MI 48202

AWARD AMOUNT..... \$387,027

PERFORMING ORGANIZATION: WAYNE STATE UNIVERSITY

TITLE: FLUID REASONING TRAINING FOR URBAN ELDERS

ABSTRACT:

The long-term goal of this multi-site trial is to reduce the increasing public health problems of need for formal care, hospitalization, and substantial loss of independence in the nation's growing older population. Persons over the age of 65 account for almost half of all days of care in short stay hospitals and constitute the majority of residents of nursing homes. Interventions that can postpone or prevent hospitalization or need for formal care, have much to contribute both to public health and to the quality of life among older people. The goal of this trial is to examine the effects of a cognitive intervention such as reasoning ability or memory training targeted to older adults who are at-risk for loss of independence. Outcome measures will be more proximal such as functional abilities (e.g., ADLs) and associated strongly with hospitalization and need for formal care. The impetus for this trial comes from a) the recent success of different cognitive, or related perceptual, intervention techniques at enhancing some aspects of ability or functioning; b) the increasing evidence that cognitive factors are associated with key public health outcomes such as hospitalization and death; and c) the increasing need to find preventative techniques that successfully maintain the quality of life of the older population.

Despite these successes, no clear consensus exists on the likelihood of success of cognitive interventions at reducing the public health problems of hospitalization and need for formal care in the older population. Differences in the interventions, outcome measures, and samples have made generalizations across different findings impossible. This trial seeks to address these problems by testing a common intervention on a well defined population using common outcome measures. The trial will explore whether site-specific variations or specific sample characteristics limit the applicability of previous findings.

PROJECT NUMBER.....5 R01 AG07137-11

INVESTIGATOR NAME/ADDRESS  
MC ARDLE, J JACK  
UNIVERSITY OF VIRGINIA  
GILMER HALL  
CHARLOTTESVILLE, VA 22903-247

AWARD AMOUNT..... \$229,750

PERFORMING ORGANIZATION: UNIVERSITY OF VIRGINIA CHARLOTTESVILLE  
TITLE: GROWTH CURVE OF ADULT INTELLIGENCE FROM CONVERGENCE DATA

ABSTRACT:

Our previous research on the Wechsler Adult Intelligence Scale (WAIS; NIA grants AGO2695, AG0474, and AGO7407) has produced: (1) a large-scale data base of WAIS information useful for aging research, (2) some novel structural equation models appropriate for aging research, (3) some results about the complex measurement functions of the WAIS, and (4) some results about the complex growth curve functions of intellectual ability. During the past two years of this project we have tested a strategically selected set of adults who have already been tested before on a wider battery of ability measures. This includes the collection of three-wave longitudinal retest data on the large National Growth and Change Study (NGCS) sample, and the sixth-wave of longitudinal data on the smaller Bradway sample. Our new analyses are focusing on the leading and lagging indicators of dynamic aging processes, especially for different groups of persons.

In this competing continuation proposal we continue to use new statistical methods for the synthesis of research on the measurement and growth curves of intellectual abilities. We base all analyses on structural "convergence models" using "planned missing" subjects, occasions and variables. We also implement an experimentally efficient data collection plan to collect critical missing adult abilities data. In the current project we will recruit and retest three different samples spread across all geographical areas of the USA. Subjects with a pre-specified retest lag period between 4 and 10 years will be sampled to examine individual differences in cognitive changes, including the following three groups: (1) N=55 subjects aged 64-68 from the Bradway-McArdle longitudinal sample - These persons are now about 64 years of age and have been tested on intellectual abilities since they were 4 years old (last tested in 1992). (2) N=200 adults aged 19 to 95 years who have been tested before on the WAIS or the Woodcock-Johnson (WJ) tests of intellectual ability (last tested in 1986 or 1992). (3) N=200 adolescents aged 18 to 24 from the previous NGCS national sample who have already been tested twice before on the WJ-R test battery at ages 12 to 18 (last tested in 1986). In all samples we will use an extensive battery of ability tests, including parts of the standard WAIS, the Woodcock-Johnson Revised (WJ-R) test of abilities and achievements, and our NGCS demographic questionnaire. This is a continuation of our previous work in several ways. First, based on our previous findings, we will recast substantive theory about intellectual development into testable models. Second, we will further develop mathematical and statistical models for growth and change required to deal with the complex set of WAIS and NGCS data. Third, we will collect some new data that will allow us to more effectively use latent variable structural equation models. This plan will help us identify both the factors of measurement and the factors of change, unravel the dynamics effects of multiple growth and retest processes, and separate the direct from the indirect exogenous effects on these intellectual ability factors. These new results will synthesize all past research on the WAIS and provide valuable information for further research.

PROJECT NUMBER.....5 R37 AG08861-08

INVESTIGATOR NAME/ADDRESS  
MC CLEARN, GERALD E  
PENN. STATE UNIV.

AWARD AMOUNT..... \$274,952

UNIVERSITY PARK, PA 16802

PERFORMING ORGANIZATION: PENNSYLVANIA STATE UNIVERSITY-UNIV PARK  
TITLE: ORIGINS OF VARIANCE IN THE OLD-OLD--OCTOGENARIAN TWINS

ABSTRACT:

Individual differences both in rate and pattern of aging is large, pervasive and ubiquitous. Individuals are distributed between the extremes of those who remain intact throughout life and those who experience early decline in vitality and functional capacity. Understanding the origins of this multifaceted variability is of fundamental importance both for basic-science understanding of aging and age-related processes and for the development of rational health- and disease-related applications.

Quantitative genetics offers an explicit analytical model for the identification of relative contributions of two broad domains of influence on living systems --genetics and environment. The study of monozygotic and dizygotic twins is one of the strongest available methods for decomposing the manifest variance in complex traits into genetic and environmental components.

This proposal seeks support for a longitudinal extension of our current grant (AGO8861), "Origins of Variance in the Old-Old: Octogenarian Twins" (OCTO-Twin). The aim of OCTO-Twin is to explore the genetic and environmental bases of variability in age-related variables in the oldest-old. The proposed inclusion of two additional measurement occasions at two-year intervals will provide unique information on the relative contributions of genetic and environmental influence to change and continuity in advanced ages. The longitudinal data will also identify significant numbers of individuals giving evidence of cognitive impairment, which will shed light on the critical question of whether late-onset diagnosable dementias are distinct, categorical conditions or whether they represent the low end of a continuous distribution of cognitive function.

PROJECT NUMBER.....5 R01 AG13973-07

INVESTIGATOR NAME/ADDRESS  
MC EVOY, CATHY L  
UNIVERSITY OF SOUTH FLORIDA  
13301 N BRUCE B DOWNS BLVD  
TAMPA, FL 33612-3899

AWARD AMOUNT..... \$88,823

PERFORMING ORGANIZATION: UNIVERSITY OF SOUTH FLORIDA  
TITLE: PRIOR KNOWLEDGE EFFECTS IN COGNITIVE AGING

ABSTRACT:

The recall of newly learned information declines with increasing age across the adult years. The magnitude of the age effect is influenced by the criterion task used to test recall, such that greater age effects are found in free and cued recall, as compared to recognition. Age effects are also more apparent when the test instructions require the subject to explicitly recall the studied information, rather than using implicit tests to prompt that recalls. When the to-be learned information is presented as explicit facts, requiring little inferential processing on the part of the subject, age effects are less apparent. And finally, the use of semantic relationships between newly learned items of information appears to be more spontaneous and beneficial for younger than for older adults.

The proposed research will apply an existing model of human memory to the cognitive changes associated with aging. This model describes the effects of prior knowledge that the person brings to the learning situation, and the encoding and retrieval processes used in memory tasks. The model was developed using young adult subjects, and is now sufficiently detailed to apply to memory changes in older adults. The long-term goal of the project is to understand the ways in which older subjects use their prior knowledge to encode and retrieve information. Emphasis will be placed on processes such as the use of prior semantic connections in encoding new information, retrieval inhibition from searching existing knowledge, and accessing concepts across domains of information (i.e., accessing the phonemic code for a word when its semantic code has been retrieved).

The initial work on this project will be directed toward understanding cognitive changes in normal healthy elderly subjects. However, this project is also designed to investigate cognitive changes in elderly subjects with intellectual impairment from early dementia and clinical depression. The results of this research will allow us to understand the differences and the commonalities between normal and abnormal cognitive aging, and will have implications for developing techniques for teaching impaired elders.

PROJECT NUMBER.....5 R01 AG09957-04

INVESTIGATOR NAME/ADDRESS  
MEYER, BONNIE J F  
PENN. STATE UNIV.  
204 CEDAR BUILDING  
UNIVERSITY PARK, PA 16802-310

AWARD AMOUNT..... \$173,110

PERFORMING ORGANIZATION: PENNSYLVANIA STATE UNIVERSITY-UNIV PARK  
TITLE: MINIMIZING AGE DIFFERENCES IN READING--HOW AND WHY

ABSTRACT:

The long term goals of the research are to identify 1) factors and conditions that produce optimal reading comprehension and retrieval for older learners, and 2) mechanisms responsible for age-related deficit in processing texts; specifically, can working memory deficits account for most of the accountable variance in the decline between reading performance and aging?

The literature on discourse processing and aging show that age-related differences are minimized or eliminated when the text presentation pace is slowed, and the readers is given maximum support of signals (text structure) and strategy. Given these findings, two logical research questions follow. One, how do pace, signals, and strategies interact to minimize age difference? And, more importantly, why? The proposal research will combine the expertise from two laboratories. First, Meyer's laboratory will examine the necessary combination of conditions that will produce minimum and large age differences in text comprehension followed by experiments to understand interactions among age pace, signals, and strategies. This unique set of experiments is designed to extend our knowledge on the how question. At the same time, Poon's laboratory will examine the why questions by studying the predicative accuracy of individual differences in working memory capacities and processing rates on text comprehension. Information gathered on measures of working memory from Poon's laboratory will be used in Meyer's laboratory to further examine patterns of relationships between aging and memory as stress on the processing of texts is varied. Finally, a four-month text comprehension training program will be conducted in both laboratories based on our understanding of individual differences.

Through this systematic series of studies the proposed research will further extant understanding of an important specific cognitive function, reading comprehension. The proposed series of studies of studies examines how much of the accountable variance attributed to age in reading performance can be attributed to working memory deficits as stress on processing is systematically varied by manipulating important strategy, text, and tasks variables. These findings will add to a better understanding of age-associated changes of cognitive performance found in cross-sectional studies.

PROJECT NUMBER.....5 R01 AG12163-05

INVESTIGATOR NAME/ADDRESS  
MORROW, DANIEL  
UNIVERSITY OF NEW HAMPSHIRE

AWARD AMOUNT..... \$126,455

DURHAM, NH 03824

PERFORMING ORGANIZATION: UNIVERSITY OF NEW HAMPSHIRE  
TITLE: DESIGNING REMINDER MESSAGES FOR OLDER ADULTS

ABSTRACT:

The goal of this project is to improve the design of spoken messages about health services for older adults. Spoken communication between health professionals and patients is becoming more frequent as automated telephone reminder systems gain currency in the health field. This rapid development in automated voice message technology has outstripped what we know about effective communication in this context. The proposed research will investigate the design of spoken messages about health services in order to improve comprehension, memory and adherence to messages about health services.

We investigate the following message design issues: (a) Message content- What types of information are necessary for adherence? Do adults share preferences for how this information should be ordered in messages? (b) Message organization- Are messages more effective when organized to match reader preferences? We will test if spoken messages are easier to understand and remember when compatible with listener knowledge about the health care task. (c) Message length- How much information can be effectively conveyed in a reminder message? Can well-organized messages present more information than poorly organized messages? (d) Message modality- Many messages may be more effective when presented by voice than by print. Spoken pre-recorded messages have increased adherence compared to no message control conditions. Yet there is little research on how much information can be conveyed effectively by voice, or if interactive features such as message repeats or prompts improve recall. (e) Presentation of spoken messages- Can the impact of spoken messages on memory and adherence be enhanced by slowing presentation and stressing critical information? (f) Listener factors- To what extent do these message factors depend on listener age, education, perceived health status and self-efficacy, as well as beliefs about the health service? Listeners may need to be motivated to take advantage of well-designed communication.

We investigate the influence of these message and listener factors on (a) message understanding and memory; (b) how accurately subjects assess their level of comprehension and memory (meta-cognitive abilities); (c) preferences for the messages, including beliefs about how motivating the messages are; (d) beliefs about the services described in the messages; and (e) beliefs about self-efficacy. Well-designed messages are most likely to improve adherence to health care services if they motivate as well as enable people to adhere by improving comprehension and memory. The final step in the research will be to measure the impact of well-designed messages on simulated adherence. The message design guidelines resulting from this research should help ensure that voice message technology, an increasingly frequent form of communication between health professionals and patients, addresses the needs of older adult patients.

PROJECT NUMBER.....5 R01 AG13936-02

INVESTIGATOR NAME/ADDRESS  
MORROW, DANIEL G  
UNIVERSITY OF NEW HAMPSHIRE

AWARD AMOUNT..... \$137,408

DURHAM, NH 03824

PERFORMING ORGANIZATION: UNIVERSITY OF NEW HAMPSHIRE

TITLE: EXPERTISE AND AGE DIFFERENCES IN PILOT COMMUNICATION

ABSTRACT:

DESCRIPTION (Adapted from Investigator's Abstract): This application proposes to study whether expertise mitigates age declines in pilots' performance in situations of environmental support for use of domain knowledge. Pilots will listen to and repeat air traffic control (ATC) messages (standard ATC communication procedure) in the laboratory. This task will be extended in order to examine which task factors support mitigation and how. Ultimately, the task will be integrated into simulator-based studies to allow investigation of communication ability in a task environment that provides more opportunity for support while increasing overall demand. The impact of expertise, age, and task factors on communication errors, time, and recall will be studied. The proposal asserts that the obtained results will not only address issues of aging and pilot communication, but also elucidate the relationship of domain knowledge and the role of the task environment to mitigation of age-related declines.

PROJECT NUMBER.....5 R44 AG12711-03

INVESTIGATOR NAME/ADDRESS  
OWENS, BOONE B  
RESEARCH INTERNATIONAL INC  
10 LOOKOUT HARBOR-P.O.BX. 809  
WRIGHTSVILLE BEACH, NC 28480

AWARD AMOUNT..... \$392,180

PERFORMING ORGANIZATION: RESEARCH INTERNATIONAL, INC.  
TITLE: LONG LIFE, RECHARGEABLE HEARING AID

ABSTRACT:

The objective is to develop a rechargeable battery that is small enough to be incorporated in an ITC device, will contain adequate power to operate a hearing aid reliably for at least one day, can be readily recharged at night and will last for the lifetime of the hearing aid. The hearing aid will normally be placed into a charger receptacle each evening, to be fully recharged within six hours.

A lithium-ion battery chemistry provides the basis for this high voltage, rechargeable cell that is safe and contains no lithium metal. The battery design and process development will be completed during the first 18 months. In collaboration with an existing battery manufacturer, a pilot line will be established for the production of qualification batteries.

In parallel, a compact recharging system will be developed. Two alternatives will be evaluated. A consortium of hearing aid manufacturers will be established to guide development and facilitate commercialization.

PROPOSED COMMERCIAL APPLICATION: Approximately 5 million people in the U.S. wear hearing aids. With battery replacement required every 1-2 weeks, over 150 million batteries are consumed annually; a battery cost in excess of \$150 million. Annualized user costs for a rechargeable battery are estimated at \$85 million. This represents a potential savings in health care costs of \$65 million, while providing improved therapy and reduced hazards.

PROJECT NUMBER.....1 R01 AG14684-01

INVESTIGATOR NAME/ADDRESS  
OWSLEY, CYNTHIA  
UNIVERSITY OF ALABAMA  
SCHOOL OF MEDICINE  
BIRMINGHAM, AL 35294-0009

AWARD AMOUNT..... \$184,109

PERFORMING ORGANIZATION: UNIVERSITY OF ALABAMA AT BIRMINGHAM  
TITLE: VEHICLE CRASHES, INJURIES AND OLDER DRIVERS

ABSTRACT:

DESCRIPTION: The long-term goal of this research is the prevention of unintentional injuries due to vehicle crashes by older drivers, through risk factor identification and the development and evaluation of interventions to minimize risk. The objective of the proposed study is to identify performance limitations, which place older drivers at risk for crashes in which the older driver is injured. Special attention will be directed at visual and cognitive (including attentional) performance since these skills are critical for vehicle control, tend to decline with age yet are under certain circumstances reversible, and have been associated with unsafe driving among the elderly in prior research. This objective will be addressed by a multiple cohort follow-up study utilizing pooled analysis techniques, on an aggregate sample of 3,839 older drivers brought together through the University of Alabama at Birmingham's Center for Research in Applied Gerontology. Visual, cognitive, and medical data are already being collected on these drivers through other studies and is thus financially underwritten by other projects. A major advantage of the research design is that the high cost of collecting functional data on almost 4,000 older drivers does not have to be covered by this project. In addition, the cost of procuring crash data (including the detailed accident report) is also financially underwritten by five or six cohort sites.

Injury information will be collected from medical records from the treatment facility, using state-of-the-art injury coding schemes. The cohorts proposed for study will have up to 9 years of follow-up. An interdisciplinary research team has been assembled to carry out this study, including researchers expert in vision and cognitive sciences, older driver research, injury epidemiology, medicine, gerontology, and biostatistics. The main hypothesis to be tested is that the visual/cognitive impairments that place older drivers at risk for crashes, also place them at risk for injury. However, crashes that lead to injury may be more strongly related to more severe forms of visual/cognitive impairment, than crashes that do not lead to injury. Older drivers in poor health are more likely to incur crashes than those in good health, where poor health is defined as the existence of co-morbid medical conditions. Data analysis will center around developing predictive models of injurious crashes based on visual and cognitive function and medical conditions.

PROJECT NUMBER.....1 R13 AG14631-01

INVESTIGATOR NAME/ADDRESS

PARK, DENISE C

UNIVERSITY OF MICHIGAN

525 EAST UNIVERSITY AVE

ANN ARBOR, MI 48109-1109

AWARD AMOUNT..... \$49,950

PERFORMING ORGANIZATION: UNIVERSITY OF MICHIGAN AT ANN ARBOR

TITLE: MEDICAL INFORMATION PROCESSING AND AGING CONFERENCE

ABSTRACT:

The present conference proposal is a request to develop an important area of applied cognitive aging research--the role of age an cognitive function in understanding patient behavior in medical setting. Development in this domain has substantial implications for understanding utilization of limited health care resources and for benefits for older adults. A conference and edited volume are proposed that focus on three areas: medical decision-making and aging, the human factors perspective associated with structuring medical information for older adults, and model of medication adherence. Because much progress has been made in our basic understanding of age-related changes in cognitive mechanisms, this undeveloped topic seems well suited for emphasis at this time. The issue has been highlighted as one of importance for future research in the 1995 federal "Task Force on Aging Report."

PROJECT NUMBER.....5 R01 AG10175-04

INVESTIGATOR NAME/ADDRESS

PEDERSEN, NANCY L

PENN. STATE UNIV.

101 AMY GARDNER HOUSE

UNIVERSITY PARK, PA 16802

AWARD AMOUNT..... \$96,540

PERFORMING ORGANIZATION: PENNSYLVANIA STATE UNIVERSITY-UNIV PARK

TITLE: GENETIC & ENVIRONMENTAL INFLUENCES--BIOBEHAVIORAL AGING

ABSTRACT:

The primary purpose of the proposed research is to capitalize on an initial investment of the National Institute on Aging (AGO4563) which in 1984 launched the only longitudinal behavioral genetic analysis of individual differences in functioning later in life. The study, called the Swedish Adoption/Twin Study of Aging (SATSA), uses the powerful design of twins reared together and twins reared apart, and has become a landmark study of gerontological genetics. SATSA now has the opportunity to study this unique sample a decade later through the inclusion of a third wave of in-person testing (IPT3) and a fourth wave of questionnaire assessment (Q4). Approximately 600 individuals will be tested in IPT3, and 2,000 individuals will receive Q4. Longitudinal data to be collected in IPT include measures of health and health-related behavior, nutritional status, activities of daily living, functional capacity, and cognition. The questionnaire phase covers self-perceived impairment due to health-related outcomes, personality, and measures of the environment including life events, social support, socioeconomic status and the family environment. The powerful adoption/twin design of SATSA provides a compelling basis for analyzing issues of genetic and environmental contributions to change and continuity in biobehavioral aging.

Extension of SATSA to three measurement occasions will enable quantitative genetic analyses of research issues related to the shape of growth curves, such as the importance of genetic factors for terminal decline and reduction in functional capacity. Three points of measure provide a more appropriate basis for examining structural change in the relationship of measures within and between biobehavioral domains. Thus, analyses will also be concerned with assessing the extent to which genetic and environmental factors mediate the relationship between health, cognition and well being in the elderly. More refined analyses of the etiology of developmental turning-points and the mechanisms contributing to longitudinal stability and change will be possible with the inclusion of a fourth occasion. Predictive relationships, such as the impact of life events and social support on cognitive and health outcomes at subsequent occasions, will also be the object of study.

PROJECT NUMBER.....5 R44 AG12090-03

INVESTIGATOR NAME/ADDRESS

RAGER, ROBERT

COMPACT DISC INCORPORATED

1908 RAINBOW DRIVE

SILVER SPRING, MD 20905

AWARD AMOUNT..... \$532,958

PERFORMING ORGANIZATION: COMPACT DISC, INC.

TITLE: CD-I IMPROVES OLDER PERSONS INTENTIONAL MEMORY SKILLS

ABSTRACT:

Compact Disc Incorporated proposes research to apply interactive multimedia Compact Disc technology to improve the prospective memory skills of the able-minded aged concerned with forgetfulness in remembering and executing intended actions or activities such as taking medications on time and keeping scheduled appointments. Failures at prospective tasks are especially upsetting to the elderly. The proposed skill-development program, focusing on temporal cues and event-based cues, will equip older adults with effective strategies for executing intended actions and will also alleviate anxiety and embarrassment associated with failures to enact actions. This Phase II project will develop and field test a commercial interactive multimedia CD program called, "BEST INTENTIONS," to increase the ability of older adults to successfully accomplish prospective memory tasks. An engaging and entertaining and cost effective technology, interactive multimedia CD will greatly enhance outcomes over passive video tapes or printed materials for prospective memory education and behavior- change programs.

Phase I results indicate wide acceptance of the BEST INTENTIONS concept among older adult subjects and research- oriented professionals in the field of cognitive intervention. Using Phase I prototype information, the specific aims of Phase II are: 1) produce a complete interactive multimedia CD program that includes background information, strategy training, assessment, and continuing practice components; 2) assess the acceptability of the full program among older adults; 3) test the efficacy of the program in changing older adults' knowledge, attitudes, and intended behaviors toward enhancing prospective memory function; and, 4) secure and implement distribution commitments during commercialization Phase III.

PROPOSED COMMERCIAL APPLICATION: Sales of the BEST INTENTIONS prospective memory skill training CD-i & CD-ROM program will be to individuals and: 1) membership organizations (e.g., AARP national/regional divisions); 2) Jones Interactive Inc. cable TV direct response infomercials; 3) Philip-Media markets CD-i systems to commercial, government and educational organizations as alternatives to CD-ROM, including Corporate Wellness & Managed Care Programs at "Fortune 1000" companies; 4) Professional memory trainers via American Psychological Association.

PROJECT NUMBER.....1 R43 AG14320-01

INVESTIGATOR NAME/ADDRESS

RAGER, ROBERT  
COMPACT DISC INC

AWARD AMOUNT..... \$98,477

1908 RAINBOW DR  
SILVER SPRING, MD 20905

PERFORMING ORGANIZATION: COMPACT DISC, INC.

TITLE: CD ROM MONITOR IMPROVES OLDER PERSONS MEMORY READINESS

ABSTRACT:

Compact Disc Incorporated proposes research to apply Compact Disc- interactive technology to improve personal memory readiness skills of the able-minded aged concerned with forgetfulness in remembering and experience anxiety or frustration, which may further negatively influence their memory performance during such conditions of stress or their current memory readiness. Failures at everyday memory tasks are especially upsetting to the elderly. The proposed skill-development program will not only equip older adults with effective strategies for improving memory readiness but will also alleviate anxiety and embarrassment associated with failures to enact actions. By addressing the issue of memory readiness from a holistic multimodal model of human memory performance by examination of series of internal and external factors shown to influence individual memory readiness. The Memory Monitor is conceived as an engaging entertaining TV-based technology that should greatly enhance outcomes over passive videotapes or printed materials for multi-modal memory education and behavior-change programs to help able-minded aged concerned with forgetfulness in remembering and executing actions.

This Phase I Project will develop and field test a prototype CD-ROM program called THE MEMORY MONITOR to demonstrate increases in the user's ability to monitor, adjust, and maintain cognitive and non-cognitive influences on learning and remembering. Phase I aims are: 1) develop a plan to develop a comprehensive program for monitoring one's psychological states in order to facilitate memory and cognitive functioning; 2) produce a prototype program that guides users through such monitoring; and 3) field test the concept for efficacy. Phase II will develop THE MEMORY MONITOR fully to meet a wide variety of everyday activities involving learning & remembering. Jones Interactive Inc., has agreed to co-fund distribution in Phase III.

PROPOSED COMMERCIAL APPLICATION: 1. Jones International's Jones Digital Century multimedia publishing businesses will distribute it nationally. 2. The Practical Memory Institute will support the Memory Monitor program with auxiliary material and professional market distribution. 3. Adult day care facilities. 4. Patient education in HMOs, Hospitals, Physicians offices. 5. Community centers and adult educational programs for seniors. 6. Corporate wellness programs.

PROJECT NUMBER.....5 U01 AG14260-02

INVESTIGATOR NAME/ADDRESS

REBOK, GEORGE W

JOHNS HOPKINS UNIVERSITY

624 N BROADWAY RM 808

BALTIMORE, MD 21205

AWARD AMOUNT..... \$472,180

PERFORMING ORGANIZATION: JOHNS HOPKINS UNIVERSITY

TITLE: TRIAL OF A COGNITIVE INTERVENTION FOR OLDER ADULTS

ABSTRACT:

The long-term goal of this multi-site trial is to reduce the increasing public health problems of need for formal care, hospitalization, and substantial loss of independence in the nation's growing older population. Persons over the age of 65 account for almost half of all days of care in short stay hospitals and constitute the majority of residents of nursing homes. Interventions that can postpone or prevent hospitalization or need for formal care, have much to contribute both to public health and to the quality of life among older people. The goal of this trial is to examine the effects of a cognitive intervention such as reasoning ability or memory training targeted to older adults who are at-risk for loss of independence. Outcome measures will be more proximal such as functional abilities (e.g., ADLs) and associated strongly with hospitalization and need for formal care. The impetus for this trial comes from a) the recent success of different cognitive, or related perceptual, intervention techniques at enhancing some aspects of ability or functioning; b) the increasing evidence that cognitive factors are associated with key public health outcomes such as hospitalization and death; and c) the increasing need to find preventative techniques that successfully maintain the quality of life of the older population.

Despite these successes, no clear consensus exists on the likelihood of success of cognitive interventions at reducing the public health problems of hospitalization and need for formal care in the older population. Differences in the interventions, outcome measures, and samples have made generalizations across different findings impossible. This trial seeks to address these problems by testing a common intervention on a well-defined population using common outcome measures. The trial will explore whether site-specific variations or specific sample characteristics limit the applicability of previous findings.

PROJECT NUMBER.....5 R37 AG08055-09

INVESTIGATOR NAME/ADDRESS  
SCHAIE, K WARNER  
PENN. STATE UNIV.

AWARD AMOUNT..... \$975,367

UNIVERSITY PARK, PA 16802

PERFORMING ORGANIZATION: PENNSYLVANIA STATE UNIVERSITY-UNIV PARK  
TITLE: LONGITUDINAL STUDIES OF ADULT COGNITIVE DEVELOPMENT

ABSTRACT:

The Seattle Longitudinal Study (SLS) which has investigated cognitive development in adults over a 28 year period is to be extended over another seven-year interval including the acquisition of a sixth wave panel. The core project supports the maintenance of panels and data archives. The four subprojects extend the study into new directions; (1) A family resemblance study will recruit 900 children and 600 siblings of current and former SLS participants, to investigate generational shifts in ability status across generations, and to examine parent-offspring and sibling correlations in cognitive abilities, not hitherto examined in adults. (2) A health history study involves secondary data analyses of the relationship between (a) disease, intellectual stability and decline, and (b) of the relationship between the occurrence of disease and effectiveness of cognitive training in the remediation of intellectual decline. Health histories will be updated for all subjects assessed in the 1983-85 cycle, as well as for the longitudinal subjects to be assessed in the proposed 1990-92 cycle. (3) A seven-year follow-up study on the long-term effects of cognitive training and practice will investigate how such interventions affect both level and rate of cognitive aging. Approximately 300 participants will receive 5 hours of cognitive training on Inductive Reasoning or Spatial Orientation as well as a 5-hour pretest/ posttest battery. Practice effects will be assessed with approximately 200 matched control participants. Cohort effects in cognitive training, the effectiveness of brief booster training procedures and transfer of training to real life tasks will also be examined. (4) A sixth wave of the longitudinal study of cognitive functioning will permit further investigation of the impact of demographic changes upon adult cognitive development in the pre-babyboom and babyboom cohorts. In this study approximately 1000 longitudinal subjects will be retested, and a new panel of 650 subjects will be initially assessed on a 5-hour psychometric test battery. This study will generate data suitable for the seven-year assessment of longitudinal changes in ability factor structure from young adulthood through advanced old age.

PROJECT NUMBER.....1 R01 AG14111-01

INVESTIGATOR NAME/ADDRESS

SCHWARZ, NORBERT

UNIVERSITY OF MICHIGAN

PO BOX 1248

ANN ARBOR, MI 48106-1248

AWARD AMOUNT..... \$235,690

PERFORMING ORGANIZATION: UNIVERSITY OF MICHIGAN AT ANN ARBOR

TITLE: AGING, COGNITION AND CONTEXT EFFECTS IN SELF-REPORTS

ABSTRACT:

This proposal addresses the emergence of age-sensitive context effects in self-reports of opinions and behaviors and proposes experiments aimed at identifying the underlying cognitive processes. Preliminary analyses of survey data show that older adults are more likely to be influenced by the order with which response alternatives are presented within a question than younger adults ("response order effects"), but less likely to be influenced by the content of preceding questions ("question order effects"). In both cases, the age-sensitivity of the emerging context effects may lead to erroneous substantive conclusions about age differences in opinion and behavior, depending on features of the questionnaire. To avoid misinterpretations of methods effects as substantive effects, one needs to understand their age-sensitivity. Drawing on relevant theorizing in cognitive aging, social cognition, and survey methodology, the age-sensitivity of context effects in self-reports is traced to age-dependent differences in cognitive resources and a set of complex predictions is specified. These predictions are tested in laboratory experiments and an experimental survey. Combining an experimental and an individual difference approach to cognitive functioning, experiments 1-6 address the age-sensitivity of response order effects and experiments 7-12 the age-sensitivity of question order effects, cognitive resource is assessed through a number of individual difference measures as well as manipulated. For the final year, an experimental survey is proposed to assess the stability of the laboratory results under regular survey conditions.

PROJECT NUMBER.....2 R44 AG13363-02

INVESTIGATOR NAME/ADDRESS

SEARS, JAMES T  
ASCENT TECHNOLOGY INC.  
2301 PANORAMA AVE  
BOULDER, CO 80304

AWARD AMOUNT..... \$400,387

PERFORMING ORGANIZATION: ASCENT TECHNOLOGY  
TITLE: GERIATRIC INDEPENDENT READING DEVICE

ABSTRACT:

The independent reading device (IRA) is a one handed portable electronic reading aid that vocalizes words and sentences encountered in daily reading activity including pill bottles, newspaper, and food packaging. A unique tactile interface assists users in locating and tracking the words to be spoken. During Phase I seventeen users averaging 80 years of age evaluated the device during 2 hour training sessions. 76% found the device mostly or completely easy to use and 82% felt the device would be useful in daily life and would wish to own one when fully developed. In Phase II IRA will be miniaturized and reading capabilities expanded. Sixteen subjects will participate in developmental testing, 8 subjects will perform 1-month at-home trials, and 4 subjects will participate in 6 month extended evaluations. A number of recognized experts in gerontology and low-vision research will participate in the test activity. Extensive data on device effectiveness will be collected through evaluation sessions as well as electronically through data logging within the device. The simplicity, utility, and projected low-cost of the IRA will assist with commercial success. Significant interest has been generated from distributors of assistive technology, user groups, and investment sources.

PROPOSED COMMERCIAL APPLICATION:

The Ascent Technology IRA device is a robust, multiple use portable scanner, whose capabilities are significantly better than those presently available. Ascent is aiming for a commercial volume that could support a \$1500 selling price, which competes very effectively with the existing technology. There are 3 million severely impaired elderly, as reported in 1992 by the American Foundation of the Blind, who are a potential market for this technology.

PROJECT NUMBER.....5 R29 AG11605-04

INVESTIGATOR NAME/ADDRESS  
SHARPS, MATTHEW J  
CALIFORNIA STATE UNIV,  
FRESNO  
5310 N CAMPUS DR, M/S 11  
FRESNO, CA 93740-0011

AWARD AMOUNT..... \$90,660

PERFORMING ORGANIZATION: CALIFORNIA STATE UNIVERSITY FRESNO  
TITLE: AGING AND MEMORY FOR RELATIONAL AND IMAGERIC INFORMATION

ABSTRACT:

It is of critical importance to understand the conditions that enhance memory performance in the elderly. Recent studies have demonstrated that imageric and relational information interact to influence memory performance differently in young and elderly adults. When the visual distinctiveness of items and cues in certain memory tasks is augmented, this increased imageric information may enhance the memory performance of elderly individuals significantly, in some experiments to the same levels exhibited by young adults. Increased relational information, (e.g., the category structure of stimulus sets) may also have positive effects on recall. However, several experiments have shown that the same relational and imageric cues, which augment recall in young adults, may actually diminish recall performance in elderly adults. Different combinations of imageric and relational information may produce widely different performance outcomes for young and elderly adults; some informational conditions are associated with identical levels of recall for young and elderly, whereas others may produce spurious "age differences" which can be entirely ameliorated through the use of appropriate experimental tasks. It is argued that these effects are predictable, and may be united, explained, and extended within the item-specific/relational information theory of Hunt and colleagues, and the environmental support hypothesis of Craik. It is suggested that these patterns of findings reflect age differences in the need to reduce mental effort at retrieval, and the use by young and elderly adults of different types of information in different ways to accomplish this end.

Experiments are proposed to investigate the effects of specific combinations of relational and imageric factors on memory performance across the adult lifespan, and to demonstrate the predictability of these effects within the theoretical frameworks employed, as well as the degree to which these frameworks unite and explain these findings. The proposed work will employ established methods in spatial and nonspatial memory to investigate memory for contextual imageric information, item-specific imageric information, and relational information, in young, elderly, and "old old" adults. This research will specifically address the types and levels of imageric and relational information that are maximally facilitative of memory in the elderly.

PROJECT NUMBER.....5 T32 AG00175-07

INVESTIGATOR NAME/ADDRESS  
SMITH, ANDERSON D  
GEORGIA INST OF TECH  
SCHOOL OF PSYCHOLOGY  
ATLANTA, GA 30332

AWARD AMOUNT..... \$156,023

PERFORMING ORGANIZATION: GEORGIA INSTITUTE OF TECHNOLOGY  
TITLE: RESEARCH TRAINING IN COGNITIVE AGING

ABSTRACT:

The goal of this proposed training program is to provide an excellent academic context for training pre- and post-doctoral students in Cognitive Aging. Various aspects of cognition are known to vary as a function of adult age, and cognitive changes have been implicated in most pathologies of aging. Because of its importance to understanding adult development and aging, it is clear that a better understanding of the relationship among various cognitive processes and aging is required. The proposed program will provide research training for future scientists in this important area.

This application for pre- and post-doctoral training involves core faculty members conducting research in Cognitive Aging from Georgia Tech, together with adjunct core faculty from the University of Georgia. The University of Georgia has submitted a parallel, complementary application with the Georgia Tech core faculty serving as adjunct core faculty on that application. Five new aging researchers have been added to the faculty at both institutions in the past two years. In addition to having history of collaboration, the core faculty members have the unique qualification of providing coverage of virtually all-substantive areas in cognitive aging.

Although the program is presented as a joint program, separate proposals from each institution have been submitted because doctoral degrees will be conferred by the university in which the predoctoral trainees are enrolled. Each institution, however, benefits from the adjunct core faculty, their expertise and research skills, and the resources of the other institution.

In the current application, support for two predoctoral fellows is requested. This support increases in subsequent years by one fellowship per year until the maximum number of four predoctoral trainees is achieved. Funds are also requested for two postdoctoral fellows (one junior and one senior). The senior fellow will alternate between Georgia tech and the University of Georgia on alternate years.

PROJECT NUMBER.....2 R44 AG11500-02

INVESTIGATOR NAME/ADDRESS

STERNS, RONNI S

LIFESPAN ASSOCIATES

680 NORTH PORTAGE PATH

AKRON, OH 44303

AWARD AMOUNT..... \$408,613

PERFORMING ORGANIZATION: LIFESPAN ASSOCIATES

TITLE: CARRIER LIFT TO ENHANCE DAILY ACTIVITIES

ABSTRACT:

Market potential exists for the development of low technology products to assist older adults in completing common household tasks. A number of retailers have expressed interest in distributing/retailing such products. Transport tasks such as doing the laundry are especially problematic. LIFESPAN ASSOCIATES, INC. proposes to design and manufacture a lightweight, mobile product that carries, raises and lowers the load. The product will overcome limitations found in current products, enabling older adults to continue to perform daily household tasks independently. In Phase II research, the prototype will undergo further revision through product development research consisting of human factors tests with a prototype revised according to Phase I results and video presentation of the new prototype's functions and benefits. Manufacturing capabilities will be explored and developed to create working prototypes for extended use and assessment in the subsequent product evaluation research. Finally, product functions, features and benefits will be evaluated by a nationally representative sample of older adults. Research findings will result in the final product design which most meets consumers needs in transport tasks as well as manufacturing specifications and requirements for Phase III commercialization.

PROPOSED COMMERCIAL APPLICATION:

Older consumers desire products to enhance activities of everyday life. With almost 1/3 of the population projected to 55+ by the year 2020, retailers recognize the need to market products to this age group. Catalogue companies seek out new product sources. Retailers, such as drugstore chains, now carry products for independence. Organizations stating an interest in distributing/retailing such products include the Fairhill Center for the Elderly in Cleveland, OH and The Bissell Company. Health Care Division in Grand Rapids. MI.

PROJECT NUMBER.....1 K01 AG00722-01A1

INVESTIGATOR NAME/ADDRESS

STEVENS, ALAN B

UNIVERSITY OF ALABAMA

933 SOUTH 19TH STREET

BIRMINGHAM, AL 35294-2041

AWARD AMOUNT..... \$81,528

PERFORMING ORGANIZATION: UNIVERSITY OF ALABAMA AT BIRMINGHAM

TITLE: THERAPEUTIC ACTIVITIES IN THE NURSING HOME

ABSTRACT:

DESCRIPTION: (adapted from the application): Dr. Stevens received a Ph.D. in applied development psychology from the University of New Orleans in 1993. During his graduate career he was supported by a research assistantship on a National Institute of Mental Health research grant. He has functioned as a Research Assistant Professor of Medicine and an Associate Scientist at the Center for Aging at UAB. His research experience with nursing home and community dwelling populations, under the supervision of Dr. Burgio, has enhanced his research skills and allowed him to complete a small pilot project, which addressed the issues of feasibility and efficacy of the QAR procedure in the nursing home. This pilot project was expanded in August, 1995 through the support of a research grant from the Retirement Research Foundation. He states, p. 26 "Through these research activities, I have become aware that the issues I am trying to address are multifaceted, and a more multi-disciplinary approach would be most beneficial." Specifically, I have become interested in studying the effects of activities programs, such as QAR, on dementia patients' quality of life... and devising additional therapeutic activities based on the underlying principles of the QAR procedure.

PROJECT NUMBER.....5 R01 AG13935-02

INVESTIGATOR NAME/ADDRESS  
STINE-MORROW, ELIZABETH A  
UNIVERSITY OF NEW HAMPSHIRE

AWARD AMOUNT..... \$141,113

DURHAM, NH 03824

PERFORMING ORGANIZATION: UNIVERSITY OF NEW HAMPSHIRE

TITLE: AGE DIFFERENCES IN RESOURCE ALLOCATION DURING READING

ABSTRACT:

DESCRIPTION: The working hypothesis for this research is that, in spite of diminished processing capacity in later adulthood (Salthouse, 1991), older adults can selectively allocate time as they read so as to optimize comprehension and memory (cf. Baltes & Baltes, 1990); because of age-related reductions in processing capacity, however, a corollary of this hypothesis is that older adults' strategies must be different from those of the young in order to accomplish cognitive outcomes comparable to those of the young. A series of studies will test this hypothesis by examining the effects of individual differences, text variables, and task variables on age differences in reading strategy (as measured by time allocation to different aspects of the text) and consequent performance (in terms of memory, comprehension, and problem solving). Thus, a combination of experimental and correlational methods will be used (Hertzog, 1995) to assess age differences in on-line resource allocation, to relate these differences to performance outcomes, and to develop recommendations to enhance text processing effectiveness for older readers with different reading goals. In light of recent work showing group age differences in how reading time is allocated as well as age differences in the strategy that engenders good recall performance (Stine, 1990; Stine et al., 1995; Stine et al., under revision), the studies in this proposal will build on this research by addressing the extent to which these differences in strategy represent reliable individual differences, the extent to which they are related to cognitive and metacognitive constructs known to be related to memory performance, the flexibility of older adults' reading strategies, and how much a priori knowledge contributes to strategies of resource allocation. In addition, the investigators will attempt to learn to what extent optimal resource allocation among the elderly can be engendered by manipulations that incur processing difficulty.

PROJECT NUMBER.....5 U01 AG14282-02

INVESTIGATOR NAME/ADDRESS  
TENNSTEDT, SHARON E  
NEW ENGLAND RESEARCH INST,  
INC  
9 GALEN STREET  
WATERTOWN, MA 02172

AWARD AMOUNT..... \$345,248

PERFORMING ORGANIZATION: NEW ENGLAND RESEARCH INSTITUTES, INC.  
TITLE: TRIAL OF COGNITIVE INTERVENTION FOR OLDER ADULTS--COORDINATING  
CENTER

ABSTRACT:

DESCRIPTION: Five years of support are requested by the NERI to become a coordinating center for sites which conduct clinical trials to develop cognitive and other interventions to help older persons maintain independence for longer periods of time. The overall goal of this cooperative multisite field trial is to test the efficacy of a cognitive or related perceptual, motivational, or attitudinal intervention in promoting independent functioning in a diverse group of at-risk older adults. More specifically, the aims of this field trial include 1) designing a common cognitive intervention appropriate for the target population; 2) designing an evaluation strategy to assess the efficacy of the intervention; and 3) implementing the intervention and conducting a randomized trial to determine efficacy. This coordinating center will provide leadership and expertise in the following areas: 1) providing technical assistance in designing and evaluating the intervention, including development of a core measurement battery; 2) designing a data management system for use by the field centers, including training and monitoring of their staff; 3) developing quality control activities, including development of a manual of operations and forms, and training and monitoring of the field staff to ensure standard implementation of the common protocol across the sites; 4) monitoring data acquisition to ensure high quality databases for analyses; 5) primary analyses of trial outcomes, including integration of process measures to assess treatment fidelity; and 6) communication and meeting support.

The NERI investigators have previously conducted coordination-center activities in complex multisite trials. In addition, the NERI has equipment and expertise required for the design and analysis of non-standard trials with process measure integration and data management systems (centralized and distributed) and randomization.

PROJECT NUMBER.....5 R29 AG08589-05

INVESTIGATOR NAME/ADDRESS

TSANG, PAMELA

WRIGHT STATE UNIVERSITY

3640 COLONEL GLENN HWY

DAYTON, OH 45435

AWARD AMOUNT..... \$92,975

PERFORMING ORGANIZATION: WRIGHT STATE UNIVERSITY

TITLE: AGING AND PILOT TIME SHARING PERFORMANCE

ABSTRACT:

The primary goal of the proposed research is to study age-related changes in attentional processes. The main motivation behind this research project is that a better understanding of aging is of increasing importance due to the growing proportion of older individuals in the society. Objective and scientific information on the effects of aging on performance is critically needed so that judicious economic, effects of aging on performance is critically needed so that judicious economic, social, and retirement policy can be made. Attention is proposed here to be a prime agent through which aging effects on performance are manifest.

More specifically, research is proposed to study the effects of aging on pilot time-sharing performance. Pilot performance represents a complex performance that may be particularly prone to the adverse effects of aging and attentional limits. The research focuses on time-sharing performance because it has been identified as a critical element of pilot performance. Pilots are considered to have an expertise in time-sharing activities that could not have developed during a typical laboratory study. Comparing pilot's with non-pilot's performance thus allows an examination of the interactive effects of age and expertise. Another reason for studying pilot performance is prompted by the controversy associated with the federal regulation that prohibits a commercial pilot who has reached age 60 to be the pilot-in-command or co-pilot. This controversy begs a better understanding of the effects of aging on pilot performance. A secondary goal of the proposed research is thus to attain a better understanding of the relationship between aging and pilot performance.

In particular, three hypotheses are tested in the proposed research: (a) older adults are subject to the same structural constraints in time-sharing performance as are younger adults, (b) structural constraints in time-sharing performance are not easily eliminated by practice, and (c) age-related performance decrement is due to reduced processing resources. These hypotheses will be tested within the framework of Wickens' multiple resource model. A test battery with tasks that have previously been shown to be flight relevant or age-dependent will be developed. These tasks will be performed alone or time-shared with another task. Navon's optimum-maximum method of inducing resource allocation will be used. The causal relationship among age, attention, expertise, and time-sharing performance will also be explored via a path analysis. Pilots as well as non-pilots between the age 20 and 69 will be tested.

PROJECT NUMBER.....1 R03 AG14533-01

INVESTIGATOR NAME/ADDRESS

WEST, ROBIN L

UNIVERSITY OF FLORIDA

AWARD AMOUNT..... \$69,170

BOX 112250

GAINESVILLE, FL 32611-2250

PERFORMING ORGANIZATION: UNIVERSITY OF FLORIDA

TITLE: MEMORY BELIEFS IN RELATION TO GOALS AND TEST DIFFICULTY

Social cognitive learning theories have posited a connection between performance and three self-evaluative factors—goal setting, self-efficacy and control beliefs. This research will begin to explore these relationships, in the domain of memory, as a function of age and varying task conditions. The memory test will vary from high to low difficulty to observe the impact of challenge on these self-evaluative factors. Three studies will examine two different memory tasks, group vs. individual administration, and varied operationalizations of test difficulty. The hypotheses are comparable across the three studies. In Study 1, high and low difficulty recall tasks (starting with 34- or 14-item lists, respectively) will be administered for three test trials after baseline assessment of recall (with a moderate difficulty list) and memory beliefs. During the 3 test trials, old and young will be assigned to personal goal setting, goal setting plus feedback, or control. A final test trial will reassess baseline measures. Hypotheses: goals plus feedback will result in the largest increase between baseline and final trial for performance and beliefs; older adults will show less positive beliefs (low self-efficacy, low perceived control) and poorer performance than the young; age will interact with difficulty such that older adults will show larger differences between high and low difficulty conditions than do younger adults. Study 2 replicates Study 1 with self-paced text recall, with comparable predictions except that goal condition effects are expected to be stronger under self-paced conditions. Study 3 replicates Study 1 using individualized difficulty levels—the numbers of items on the high difficulty lists will be an individual's baseline score + 20 items and low difficulty lists will be baseline + 4. This procedure of matching difficulty to individual abilities should eliminate age interactions with difficulty level, but other predictions are the same. In all three studies, it is expected that baseline beliefs will predict goals. Regression will be utilized to test predictions concerning the impact of subject variables (e.g., education), baseline beliefs and performance, goal condition and difficulty condition, and age, on final trial beliefs and performance, based on self-efficacy theory (Bandura, 1989b; Schunk, 1991).

PROJECT NUMBER.....1 R01 AG13662-01A2

INVESTIGATOR NAME/ADDRESS

WHITFIELD, KEITH E

PENN. STATE UNIV.

E-210 HLTH & HUMAN

AWARD AMOUNT..... \$270,806

DEVELOPMENT

UNIVERSITY PARK, PA 16802

PERFORMING ORGANIZATION: PENNSYLVANIA STATE UNIVERSITY-UNIV PARK

TITLE: HEALTH AND PSYCHOSOCIAL FACTORS IN OLDER BLACK TWINS

ABSTRACT:

DESCRIPTION (adapted from investigator's abstract): This application intends to identify the sources of individual variation (genetic and environmental influences) in health among African-American twin pairs aged 65 years and older. The assertion is made that knowledge about African-Americans allows greater insight into the role of environment and genetics in aging among the greater populace. Using a twin-sibling research design, this research addresses 1) specification of the sources of genetic and environmental influences on health in older African-Americans, 2) proportions of genetic and environmental influences accounting for covariance between health and personality, cognition, mental health, and social factors, and 3) specification of the differences in the similarity of health of twins compared to other siblings. To address these questions, there are four (sic) major objectives: (1) identify a sample of 400 pairs of same-sex aged African-American twins and 200 siblings of the aged twins who reside in North and South Carolina and Virginia from a national population-based registry developed by the Black Elderly Twins Study; (2) perform in-person interviews of African-American twins and their siblings to assess the following dimensions of later life: cognition, mental health, physical health, personality, and social variables; and (3) access Medicare records on health care utilization.

PROJECT NUMBER.....5 R01 AG11032-04

INVESTIGATOR NAME/ADDRESS

WILLIS, SHERRY L

PENN. STATE UNIV.

105E HENDERSON BLDG

UNIVERSITY PARK, PA 16802

AWARD AMOUNT..... \$285,552

PERFORMING ORGANIZATION: PENNSYLVANIA STATE UNIVERSITY-UNIV PARK

TITLE: ALZHEIMER'S DISEASE AND EVERYDAY COMPETENCE

ABSTRACT:

The purpose of this research is to examine initial status and change in everyday cognitive competence for two samples of elderly at risk of cognitive impairment or suffering from low levels of cognitive functioning: 1) Low educated, nondemented elderly who may be cognitively challenged as a result of socioeconomic reasons: and 2) community-dwelling Alzheimer's patients, cognitively challenged due to neurological impairment. Everyday cognitive competence is defined as the ability to perform cognitively complex tasks of daily living. Competence is integral to one's ability to function independently and effectively in our society. Loss of everyday competence is the cardinal diagnostic feature of dementia (American Psychiatric Association, 1987). Although of importance in the study of both normal and cognitively impaired elderly, everyday competence is rarely assessed directly. Evaluation of functioning in everyday contexts has been limited to self-report, reports of family, and the clinician's rating based on cursory observations in a clinical setting. A unique contribution of the study is the objective assessment of the elderly's competence to perform tasks of daily living that involve higher-order cognitive abilities. This study includes the further development of a version of the Everyday Problems Test (EPT) for use with cognitively challenged older adults, that assesses everyday competence in seven domain of daily activities (taking medications, using a phone, managing finances, preparing food, using transportation, shopping for necessities, and maintaining a household). Study 1 is a measurement study concerned with establishment of the psychometric properties, item characteristics, and validity of the EPT for the two cognitively challenged groups. Study 2 examines initial status and change in everyday competence will be assessed over multiple occasions, and risk factors associated with low levels of functioning and with decline in competence will be examined. The samples are drawn from three ongoing clinical longitudinal studies. Use of samples from multiple research sites permits comparison of the rate of change in both a representative sample of low educated nondemented elderly, and in a well characterized and sufficiently large group of Alzheimer's patients.

PROJECT NUMBER.....5 U01 AG14263-02

INVESTIGATOR NAME/ADDRESS

WILLIS, SHERRY L

PENN. STATE UNIV.

105 HENDERSON BLDG

UNIVERSITY PARK, PA 16802

AWARD AMOUNT..... \$485,060

PERFORMING ORGANIZATION: PENNSYLVANIA STATE UNIVERSITY-UNIV PARK

TITLE: FLUID ABILITY TRAINING AMONG ELDERLY

ABSTRACT:

DESCRIPTION: Five years of support are requested by the PSU to develop methods for fluid-ability training in older persons as a common cognitive intervention in the cooperative clinical trial. The enhancement of activities associated with independent living is the primary outcome of interest in the cooperative trial. Prior research has shown a significant association between two direct measures of instrumental activities developed at PSU and the fluid abilities that are the target of training. Most recently, the investigators have found that training subjects who have low fluid ability has resulted in significantly greater improvement on an instrumental activity measure compared to those of average fluid ability. Dr. Willis developed the fluid-ability training and it has been used in two extensive programs of training research, including the Adult Development and Enrichment Project (ADEPT) and the Seattle Longitudinal Study (SLS) training studies. Significant training effects have been found in elderly persons up to seven years after they received this training. This study will involve fluid-ability training and subsequent booster sessions. Maintenance of training effects will be assessed for six months following training and for six months after booster sessions, with subjects monitored for a total of at least 16 months. Subjects will be recruited from a well-characterized at-risk population enrolled in a statewide pharmaceutical assistance program. Considerable health and health services information has already been collected on subjects available and readily accessible. The site-specific project will extend prior fluid-ability training to African Americans within the same program.

PROJECT NUMBER.....2 R37 AG04517-14

INVESTIGATOR NAME/ADDRESS  
WINGFIELD, ARTHUR  
BRANDEIS UNIVERSITY

AWARD AMOUNT..... \$158,356

WALTHAM, MA 02254-9110

PERFORMING ORGANIZATION: BRANDEIS UNIVERSITY

TITLE: AGE AND DECISION STRATEGIES IN RUNNING MEMORY FOR SPEECH

ABSTRACT:

DESCRIPTION: Ordinary conversational speech arrives very rapidly, typically averaging between 140 to 180 words per minute. From this acoustically complex and often poorly articulated speech stream the listener must rapidly segment the signal into words, extract the linguistic structure and semantic content, and then internally organize this information for comprehension and later recall. The objective of this proposal is to study rapid speech processing and memory in elderly adults. At the theoretical level, the investigators wish to understand how spoken language comprehension and memory operate within known age-related changes in auditory processing efficiency and transient memory capacity. The program has three interleaved components. The first will be to use the technique of self-paced listening to investigate elderly adults' spontaneous resource allocation strategies while listening to speech. This component will include the use of speech rate manipulations to further study the interaction between speech content, and age-related changes in processing speed, on speech comprehension and memory. The second component will examine the ways in which young and elderly adults use the intonation and stress patterns of natural speech to facilitate the structural analysis and comprehension of the speech input. The final component will use a technique of whole-word gating to explore the nature of the boundary conditions that operate on the effective use of linguistic context in word recognition in meaningful speech. Underlying this research is a question of major theoretical importance, and practical significance. This question is the degree to which time-allocation strategies, and the use of linguistic context in speech processing, represent flexibly deployable operations or whether they represent fixed modes of functioning in the aging cognitive system.

PROJECT NUMBER.....5 T32 AG00204-05

INVESTIGATOR NAME/ADDRESS  
WINGFIELD, ARTHUR  
BRANDEIS UNIVERSITY

AWARD AMOUNT..... \$82,417

WALTHAM, MA 20054-9110

PERFORMING ORGANIZATION: BRANDEIS UNIVERSITY

TITLE: COGNITIVE AGING IN A SOCIAL CONTEXT

ABSTRACT:

Funds are requested for support of 1 postdoctoral and 3 predoctoral trainees in Cognitive Aging in a Social Context. The core-training faculty consists of four faculty members in the Psychology Department who will form the nucleus of the Training Program at Brandeis. The goal of the program is to provide strong, integrated training in the areas of the experimental and social psychology of aging within a life-span developmental perspective at both the pre- and postdoctoral levels, while providing the trainees with the in-depth coverage of Cognitive and Social Psychology in general.

Predocotrual trainees will be admitted through either of the existing graduate programs in Social and Developmental Psychology or in Cognition and Perception. Predocotrual students will be examined by the procedures of the program in which they are enrolled, and their progress within the Training Program will also be reviewed.

Training will be carried out in the laboratories housed in the Psychology Department at Brandeis University. In addition to the expertise of the training faculty, considerable expertise in social and developmental psychology, statistics, research methods and computational systems, neuropsychology and cognitive science/ linguistics, is represented by other members of the Psychology Department. The breadth of our program is strengthened by the presence at Brandeis of the Policy Center on Aging at the Heller Graduate School for Advanced Studies in Social Welfare, as well as other social science faculty with interests in various aspects of human aging. We will also be able to draw on the expertise of colleagues within the greater Boston area.

PROJECT NUMBER.....5 R29 AG11602-04

INVESTIGATOR NAME/ADDRESS

WU, GE

UNIVERSITY OF VERMONT

305 ROWELL BUILDING

BURLINGTON, VT 05405

AWARD AMOUNT..... \$103,553

PERFORMING ORGANIZATION: UNIVERSITY OF VERMONT & ST AGRIC COLLEGE

TITLE: AGE, SENSATION AND FALLS--BIOMECHANICS AND PREVENTION

ABSTRACT:

The primary goals of this proposal are to study the biomechanics of posture at the level of single body segments in relation to age and peripheral sensory deficits in the visual and somatosensory systems that the aging process; also to design and implement effective training programs to improve individual postural stability. There are three specific goals; 1. To quantitatively measure and document the kinematics and kinetics of individual body segments in the young and elderly during balance recovery after an unexpected disturbance at the feet in subjects with various amounts of peripheral sensory deficiency. It is hypothesized that the kinematics and dynamics of individual body segments in response to the external fall-provoking stimuli are functions of age and peripheral sensory inputs. 2. To identify and classify the spatial-temporal patterns (STP) of body segmental kinematics and kinetics for successful and failed balance recoveries in healthy and sensory deficient conditions. It is hypothesized that the STP of inter-limb coordination are definable and distinguishable between success and failure of balance recovery, and between healthy and sensory deficient conditions. 3. To design an effective feedback training program to improve the balance recovery ability of fallers. It is hypothesized that feedback training will produce an improvement in the incidence of unsuccessful balance recovery.

The kinematic and kinetic variables (i.e. joint angles, moments, linear accelerations at center of mass (COM) of the body segments and the whole body) of eleven body segments i.e. the head, trunk, pelvis, left and right arms, thighs, shanks and feet) will be quantitatively measured during balance recovery after an unexpected disturbance at the feet in the anterior-posterior direction. A total of seventy-two subjects ranging from 21 to 76+ years of age will be examined. The measurements will be conducted under various conditions to study the relation between peripheral sensory systems and postural stability. The effect of vision will be studied by opening and closing the eyes and the effect of somatosensory input by testing subjects with peripheral neuropathy who have decreased sensation in their lower extremities. The kinematic measurements will be carried out using the integrated kinematic sensor that was developed by the PI. These measured body segmental kinematics and kinetics will be analyzed to determine their relations to age and peripheral sensory deficiency. In addition, the STP of these kinematic and kinetic variables will be identified. These patterns will be classified based on the recovery success, and will be related to individual age and sensory deficient conditions, using factor and confirmatory factor analysis approaches.

Finally, twenty-four out of seventy two subjects will be chosen to participate in the training exercise program. They will be randomly assigned into three groups; training with feedback, training without feedback, and control. The feedback group will receive on-line feedback based on their STP in order to increase the success rate in balance recovery. The STP and the numbers of failed recoveries will be compared between pre- and post-training, among all three groups. The number of reported fall events will also be compared.

This kinematic and kinetic variables (i.e. joint angles, moments, linear accelerations at center of mass (COM) of the body segments and the whole body) of eleven body segments (i.e. the head, trunk, pelvis, left and right arms, thighs, shanks and feet) will be quantitatively measured during balance recovery after

an unexpected disturbance at the feet in the anterior-posterior direction. A total of seventy-two subjects ranging from 21 to 76+ years of age will be examined. The measurements will be conducted under various conditions to study the relation between peripheral sensory systems and postural stability. The effect of vision will be studied by opening and closing the eyes and the effect of somatosensory input by testing subjects with peripheral neuropathy who have decreased sensation in their lower extremities. The kinematic measurements will be carried out using the integrated kinematic sensor that was developed by the PI. These measured body segmental kinematics and kinetics will be analyzed to determine their relations to age and peripheral sensory deficiency. In addition, the STP of these kinematic and kinetic variables will be identified. These patterns will be classified based on the recovery success, and will be related to individual age and sensory deficient conditions, using factor and confirmatory factor analysis approaches. Finally, twenty-four out of seventy two subjects will be chosen to participate in the training exercise program. They will be randomly assigned into three groups; training with feedback, training without feedback, and control. The feedback group will receive on-line feedback based on their STP in order to increase the success rate in balance recovery. The STP and the numbers of failed recoveries will be compared between pre- and post-training, among all three groups. The number of reported fall events will also be compared.

This study is aimed at trying to close the gap between the basic study of falling mechanisms and the practical task of designing fall prevention training programs so that the age-related falling can not only be understood, but also be prevented. The approach will provide-in-depth information about the functioning of and subtle changes in the postural control system resulting from sensory deterioration during the aging process. It will ultimately be used as the basis for understanding and formulating the postural control theory, and for predicting the individual falling liability. This study is congruent with the national health agenda to apply quantitative techniques to significantly improve the health and well being of the nation's elderly population over the coming decade.

PROJECT NUMBER.....5 R01 AG12713-03

INVESTIGATOR NAME/ADDRESS  
YESAVAGE, JEROME A  
STANFORD UNIVERSITY

AWARD AMOUNT..... \$171,817

STANFORD, CA 94305-5548

PERFORMING ORGANIZATION: STANFORD UNIVERSITY

TITLE: AGE RELATED LONGITUDINAL CHANGES IN AVIATOR PERFORMANCE

ABSTRACT:

Part 121 of the Federal Aviation Regulations (FARs, 121.383c) contains a provision for mandatory retirement of airline pilots at age 60. The "Age-60 Rule" was established in 1959 with "... the objective of reducing aircraft accidents attributable to the effects of pilot aging." The logic behind this decision was that ... progressive deterioration of physiological and psychological functions regularly accompanied increasing age" (From historical review by Kay et al., 1993, 1-1). Despite this rationale, there has been little data collected to examine actual performance of aviators in this age group to objectively evaluate this rule.

For several years our laboratory has studied the effects of age and drugs on aircraft pilot performance using flight simulator measures and computerized cognitive testing. Moreover, we have extensive experience in conducting longitudinal studies. In this context, we propose a longitudinal study to evaluate objectively age-related changes in flight performance of aviators 50 to 70 years of age.

Furthermore, in our extensive work with normal older adults we have been impressed by the wide variability of performance in older populations, including aviators. We believe that some cognitive ability measures may predict aviation performance better than age alone. Therefore, in our proposed work, we will include carefully selected cognitive measures to explain variability in aviation performance among older pilots.

In the proposed work we will address the following key issues: 1) Overall Effects Of Age on Aviation Performance In Pilots Aged 50 to 70. Using an accelerated longitudinal study design, we plan to determine if there are significant age-related changes in performance among aviators 50 to 70 years old. We will follow 100 pilots over a three-year period and use regression analyses to evaluate the effects of chronological age on performance over time. (2) Overall Effects of Processing Speed on Aviation Performance. In the past others and we have found, on a cross-sectional basis, that performance on measures of speed of processing and working memory is correlated with performance on aviation-related tasks. We plan to test the hypothesis that longitudinal simulator performance can be predicted by measures of cognitive processing speed.

PROJECT NUMBER.....5 T32 AG00048-17

INVESTIGATOR NAME/ADDRESS

ZARIT, STEVE H

PENN. STATE UNIV.

S-119 HENDERSON BLDG

UNIVERSITY PARK, PA 16802

AWARD AMOUNT..... \$228,353

PERFORMING ORGANIZATION: PENNSYLVANIA STATE UNIVERSITY-UNIV PARK

TITLE: INTERDISCIPLINARY TRAINING IN GERONTOLOGY

ABSTRACT:

This proposal requests a 5 year continuation of the interdisciplinary research training program in Gerontology at Penn State that will include both predoctoral and post doctoral positions. Six predoctoral positions are requested in Years 01 and 02, increasing to 12 in Years 03 through 05. At the postdoctoral level, 2 positions are requested in Year 01, increasing to 5 per year in Years 02 through 05. In the proposed program, Gerontology is conceptualized as a specialization, rather than a discipline. The training program builds upon foundations provided by the trainee's discipline. Emphasis in the curriculum is placed on interdisciplinary study of aging, methodological and statistical training appropriate to the study of development and aging, and development and implementation of empirical research projects under the guidance of experienced research preceptors. Policies for this program and review of applicants and trainees are the responsibility of an interdisciplinary training committee. A key feature of the training program is the group of faculty preceptors, who are all experienced researchers with active programs of research in adulthood and aging, and will provide hands-on research training. Preceptors will also participate in other educational activities, including presenting to the research colloquium on aging, and on occasions teaching required or elective courses for predoctoral trainees. This program will foster development of a cadre of qualified researchers in the behavioral and biological sciences with substantive interest and expertise in aging.

PROJECT NUMBER.....5 R01 AG10569-05

INVESTIGATOR NAME/ADDRESS  
ZELINSKI, ELIZABETH M  
UNIV OF SOUTHERN CALIFORNIA

AWARD AMOUNT..... \$231,812

LOS ANGELES, CA 90089-0191

PERFORMING ORGANIZATION: UNIVERSITY OF SOUTHERN CALIFORNIA  
TITLE: LONGITUDINAL ASSESSMENT OF COGNITION IN ADULTS

ABSTRACT:

Contemporary models of memory decline have been unsuccessful in accounting for the phenomena of memory and aging, probably because they do not address the complexity of memory change and the heterogeneity of performance seen in older adults relative to younger ones. The research proposed here is based on the notion that a multidimensional approach can better explain sources of memory variance with age. Such a model is best tested with cross-sectional and longitudinal methods, with the role of individual differences, as well as performance on measures reflecting different mechanisms of memory change, identified. The objectives of this work are to compare patterns of cross-sectional differences and longitudinal changes in memory in older adults and evaluate hypotheses regarding memory deficits in older adults.

Capitalizing on data from a 3-year study of memory conducted 15 years ago, the project will identify long-term changes in memory in adults. These subjects were 28-36 and 55-84 years old when initially tested. The study will compare these longitudinal data with results from a new cross-sectional sample collected as part of the project. This will make it possible to evaluate the external validity of cross-sectional designs, which are the rule in memory research, as it is very likely that such designs overestimate the extent of memory decline with age. The role of individual differences in longitudinal and cross-sectional memory performance will be investigated through analyses of psychometric abilities related to fluid and crystallized intelligence, as well as demographic characteristics including gender, education, health, and affective status. Besides the original battery of measures to be readministered, additional data on cognitive mechanisms hypothesized to cause age change over and above individual differences will be collected. These data will test the hypothesis that mechanisms of memory change vary with the requirements of the memory tasks. For example, it is expected that cognitive slowing will best predict problems in retrieving individual words, whereas working memory deficits will best predict problems in discourse memory. The study will also take advantage of the fact that the sample population was recruited from an HMO and from whom medical records will be available, to examine covariation in performance relevant to the development of disease processes. A second wave of testing will be included to examine three-year longitudinal change in the additional measures, and for testing hypotheses about change in age x cohort designs.

The results of this study will not only provide answers to important methodological questions regarding the external validity of cross-sectional studies of memory and aging, but also address a number of issues related to individual differences in intraindividual change with age in cognition, and theories about the mechanisms of age change in memory.

PROJECT NUMBER.....1 R03 AG14209-01

INVESTIGATOR NAME/ADDRESS  
ZELINSKI, ELIZABETH M  
UNIV OF SOUTHERN CALIFORNIA  
3715 MCCLINKOCK AVE  
LOS ANGELES, CA 90089-0191

AWARD AMOUNT..... \$69,506

PERFORMING ORGANIZATION: UNIVERSITY OF SOUTHERN CALIFORNIA  
TITLE: DISEASE, AGING AND COGNITION

ABSTRACT:

The proposed research examines the relationship of specific diseases with memory and cognition in older adults. Older adults perform more poorly than younger ones on a wide range of laboratory memory and cognitive tasks. Although studies suggest that general health status is not an important correlate of memory declines associated with aging, methodological problems in the measurement of "health," including the use of global scales, screening of participants for diseases causing cognitive declines, and samples too small to assess the effects of disease that affect subtle aspects of cognitive functioning, make this conclusion premature. The proposal is a pilot study that will combine approaches from cognitive psychology and epidemiology to test the hypothesis that certain diseases such as hypertension, are related to memory and neuropsychological test performance. It is hypothesized that other diseases, such as arthritis, will not be related to cognitive performance. This would indicate that use of global measures, which do not identify effects of specific diseases, have been inadequate in explaining memory change with age.

The research will use data from large sample surveys of older adults, which have detailed measures of specific health conditions and of memory and neuropsychological status to test the hypothesis that certain diseases affect memory and cognition in older adults. Data from three surveys will be tested: Asset and Health Dynamics Among the Oldest Old (AHEAD), the 65 + Rural Health Study (one of the Established Populations for Epidemiologic Studies of the Elderly), and the MacArthur Studies of Successful Aging. The advantage of the first two surveys is that both include laboratory memory measures, as well as mental status measures, and query a wide array of diseases. The latter survey includes extensive memory and neuropsychological measures, queries diseases associated with cognitive deficits, and includes an array of biological markers of system functioning. This approach will yield more comprehensive findings that have previously been reported in examining the role of disease in memory and cognition in older adults.

**Centers, Program Projects, Subprojects**

PROJECT NUMBER.....5 P50 AG11748-05

INVESTIGATOR NAME/ADDRESS

CZAJA, SARA J

UNIV OF MIAMI SCH OF MEDICINE

1425 NW 10TH AVENUE (D-101)

MIAMI, FL 33136

AWARD AMOUNT..... \$359,602

PERFORMING ORGANIZATION: UNIVERSITY OF MIAMI CORAL GABLES

TITLE: MIAMI CENTER ON HUMAN FACTORS AND AGING RESEARCH

**ABSTRACT:**

It is well established that a pressing issue for the upcoming decades is ensuring that the large population of Older Americans, is able to function independently and maintain an acceptable quality of life. The urgency of this concern stems from the knowledge that the population of elderly is increasing and large numbers of older adults have difficulty completing life activities. In response to the need to develop infrastructures, which are supportive of older adults, the University of Miami is proposing to establish a Center on Human Factors Engineering and Aging Research. The Center will encompass an integrated program of Human Factors and aging research, a plan for field intervention studies to evaluate the outcomes of the research, and a program to disseminate the information gained by the Center to government, community and corporate agencies and older adults. The overall goal of the Center is to develop strategies to enhance the quality of life and productivity of aging persons. The conceptual framework for the research program will be based on a human factors approach to person-environment transactions which involves identifying disparities between environment/task demands and the functional capabilities of older adult populations. The focus of the research project will be on practical problems encountered by older people in various arenas such as transportation, home and work. Specifically, the Center proposes three initial research projects, which will result in interventions such as a home safety training program, housing design guidelines, older driver training, and software and job design guidelines to be field tested. Outcome measures will include improvement in the performance of everyday activities, improvement in cognitive skills, reduced potential for accidents and injury and thus improved ability to live independently. The Center will have multiple performance sites and strong links to industry, government and community agencies as well as plans to organize workshops and other programs to disseminate the Center's information. The proposed Center is unique in terms of its emphasis on Human Factors Engineering, multidisciplinary team, and study populations, which draw on the multitude of elderly persons and rich ethnic diversity of South Florida.

PROJECT NUMBER.....5 P50 AG11748-05

INVESTIGATOR NAME/ADDRESS  
CZAJA, SARA J  
UNIV OF MIAMI SCH OF MEDICINE  
1425 NW 10TH AVENUE (D-101)  
MIAMI, FL 33136

AWARD AMOUNT..... \$89,901

PERFORMING ORGANIZATION: UNIVERSITY OF MIAMI CORAL GABLES  
TITLE: MIAMI CENTER ON HUMAN FACTORS AND AGING RESEARCH  
SUB TITLE: PERFORMANCE OF COMPUTER-BASED TASKS BY OLDER ADULTS

ABSTRACT:

Research concerned with age and work activities is an important area of investigation since the workforce is aging and there are increasing concerns regarding economic dependency as well as predicted labor shortages for certain occupations. The available literature on aging and work is limited especially for present day jobs. The proposed study is concerned with age and work within the context of computer based jobs. It is a follow-up study to work recently completed by the Principal Investigators. The initial study examined the impact of age, and pacing on the performance of three computer tasks (a data entry task, file modification task, and inventory management task). Sixty-five subjects ranging in age from 25 to 70 years participated. The results indicated that prior experience and age were significant predictors of performance variability. The older subjects had significantly longer response times and committed more errors than the younger subjects. The also experienced greater fatigue and task difficulty. The goal of the proposed project, is to identify the source of the age-related performance differences and to develop job redesign strategies to enhance the performance of older adults. The research will be conducted in three phases. The first phase will be an investigation of three real world computer tasks, the locus of age performance differences, and the relationship between age, performance and experience. The tasks will include a data entry task, a database query/update task and an inventory management task and will be simulations of actual jobs. The results from this study will be used to develop redesign guidelines for each of the three tasks, which will be tested in an intervention study. Finally, the guidelines will be implemented in actual work setting (Ryder Systems, Prudential Health Care and IBM) and evaluated with respect to improving the performance, workload and satisfaction of workers of all ages.

PROJECT NUMBER.....5 P50 AG11748-05

INVESTIGATOR NAME/ADDRESS  
GUERRIER, JOSE  
UNIV OF MIAMI SCH OF MEDICINE  
1425 NW 10TH AVENUE (D-101)  
MIAMI, FL 33136

AWARD AMOUNT..... \$89,901

PERFORMING ORGANIZATION: UNIVERSITY OF MIAMI CORAL GABLES  
TITLE: MIAMI CENTER ON HUMAN FACTORS AND AGING RESEARCH  
SUB TITLE: DEVELOPMENT OF INTERVENTIONS TO FACILITATE OLDER DRIVERS'  
PERFORMANCE

ABSTRACT:

Older adults are highly dependent on the automobile to satisfy their mobility needs. In fact, the car is the primary mode of transportation for most older people. Driving is, therefore, an important component of the older person's well being and independence. However, it is well recognized that driving is often difficult and hazardous for older people. Older drivers contribute to more accidents per mile driven than their younger counterparts. Furthermore, they are more likely to be injured or die as a result of such accidents than younger drivers. As the population of older persons increases in the next few decades, there may be an increase in the number of accidents involving older drivers. This is of great concern to researchers and policy makers who wish to promote the mobility of older people and ensure their safety. While a great deal of research has been directed towards the study of the problems encountered by older drivers, there are still many unanswered questions. For example, little is known about the relationship of age-related changes in cognitive abilities to driving performance or the potential for training to improve driving performance.

The proposed research will investigate the contribution of cognitive and perceptual dimensions upon the performance of driving tasks. These results will be used to identify driving activities that are sensitive to age effects. This information will be used to develop a simulator based training approach to supplement classroom approaches. An evaluation of the effectiveness of the simulator based training approach as compared to the conventional classroom approaches will also be conducted. The overall goal of the study is to develop strategies to improve older driver performance.

PROJECT NUMBER.....5 P50 AG11748-05

INVESTIGATOR NAME/ADDRESS  
KHALIL, TAREK M  
UNIV OF MIAMI SCH OF MEDICINE  
1425 NW 10TH AVENUE (D-101)  
MIAMI, FL 33136

AWARD AMOUNT..... \$89,901

PERFORMING ORGANIZATION: UNIVERSITY OF MIAMI CORAL GABLES  
TITLE: MIAMI CENTER ON HUMAN FACTORS AND AGING RESEARCH  
SUB TITLE: AN ERGONOMIC APPROACH TO ENVIRONMENTAL DESIGN AND SAFETY FOR  
THE ELDERLY

ABSTRACT:

A large percentage of accidents among the elderly occur at home and involve some type of consumer product or environmental agent such as: stairs and steps, bathtubs and showers, and improper use of tools and appliances. Accidents and resulting injuries interfere with performance of activities of daily living (ADL) as well as create fear and apprehension in older adults impeding the elderly from living independently. There are indications that many of the accidents could be prevented with appropriate intervention strategies. The development of accident prevention strategies must be based on an understanding of accident causality and of the human/environment interaction. In addition, we must develop effective techniques to disseminate this information to older individuals, caregivers, and medical personnel. This proposed project will involve: 1) developing a detailed understanding of accident causality for a number of products/environmental components; 2) identifying appropriate hazard intervention strategies for the same products/environmental components; 3) developing and evaluating education and safety training material to insure successful implementation of the hazard interventions; and 4) developing techniques to disseminate this information to relevant individuals or organization. The hazard intervention strategies will be evaluated in intervention and field studies. In the intervention study a sample of 50 home environments will be evaluated, using task analytic techniques, in terms of their appropriateness with respect to home safety and the demands (relative to capabilities) they place on the residents. Appropriate hazard reduction strategies will be developed and implemented in these homes. The effectiveness of these interventions will be evaluated by composing pre and post measures of ADL performance and home safety to a control sample who have not received the interventions. In the field study a sample of 50 elderly people will receive a multimedia home safety training program, developed in this pro and undergo a pre-post training test in order to evaluate the effectiveness of the program. The project's goal is to improve the quality of life for older people and enhance their ability to live independently at home. It fits well with the overall objectives of the Center for human Factors Engineering and Aging Research.

PROJECT NUMBER.....5 P50 AG11748-05

INVESTIGATOR NAME/ADDRESS  
RUBERT, MARK  
UNIV OF MIAMI SCH OF MEDICINE  
1425 NW 10TH AVENUE (D-101)  
MIAMI, FL 33136

AWARD AMOUNT..... \$89,901

PERFORMING ORGANIZATION: UNIVERSITY OF MIAMI CORAL GABLES  
TITLE: MIAMI CENTER ON HUMAN FACTORS AND AGING RESEARCH  
SUB TITLE: CORE--RECRUITMENT

ABSTRACT:

The application for a Center on Human Factors Engineering and Aging Research includes a recruitment core, which will be responsible for the recruitment and screening of subjects for the three studies. The subjects range from 20 years of age to 75 + years old and the recruitment core will provide equal numbers of males and females for each age group. To insure a representative sample of the Dade County area, approximately 30% of the subjects will be White non-Hispanic, 50% will be Hispanic and 20% will be Black. These ratios will mirror the current makeup of Dade County's adults. We will also make particular recruiting efforts to obtain a number of subjects with incomes below the poverty level. Recruitment of older subjects will be primarily done through a variety of Community resources from which subjects have been solicited in the past.

PROJECT NUMBER.....5 P50 AG11715-05

INVESTIGATOR NAME/ADDRESS  
FISK, ARTHUR D  
UNIV OF MICHIGAN INST SOCIAL  
RESEARCH  
426 THOMPSON STREET  
ANN ARBOR, MI 48106-1248

AWARD AMOUNT..... \$169,302

PERFORMING ORGANIZATION: UNIVERSITY OF MICHIGAN AT ANN ARBOR  
TITLE: CENTER FOR APPLIED COGNITIVE RESEARCH ON AGING  
SUB TITLE: PRINCIPLED TRAINING OF DAILY LIVING SKILLS IN THE AGED

ABSTRACT:

The purpose of the proposed research effort is to develop and validate pedagogical principles of age-related instruction for the wildest possible range of tasks. The goal is not only to create a better understanding of factors influencing learning of skills in older adults, but also to demonstrate how best to enhance instructional design and implementation to best prepare the older individual to do a specific job, perform a specific task, or work in a specific domain area. We propose a two-phased, but parallel, approach to systematically pursue the goal of identifying a principled approach to instruction based on similarities and differences in learning strategies and capabilities across young and older adults. First, we will develop, enhance, and test a taxonomic characterization of relevant age-related human performance. Next, we will evolve an empirically verified instructional approach based on characteristics of human information processing derived from that taxonomy. This latter phase is crucial in that it ensures that an appropriate instructional technique is applied to the targeted tasks.

Three scientific and practical products will result from this effort. First, a principled framework for tutoring system design will be developed. A second product will be actual training systems for learning automatic teller machines, public transportation systems, and Medicare/Medicaid rules, procedures and bill evaluation. A third product is the development of a human-engineered, practitioner-domains. Hence, our overarching goal is to develop the framework and instructional approach such that principled training prescriptions are accessible to practitioners for the design and implementation of age-specific instructional systems.

PROJECT NUMBER.....5 P50 AG11715-05

INVESTIGATOR NAME/ADDRESS  
MORRELL, ROGER  
UNIV OF MICHIGAN INST SOCIAL  
RESEARCH  
426 THOMPSON STREET  
ANN ARBOR, MI 48106-1248

AWARD AMOUNT..... \$169,302

PERFORMING ORGANIZATION: UNIVERSITY OF MICHIGAN AT ANN ARBOR  
TITLE: CENTER FOR APPLIED COGNITIVE RESEARCH ON AGING  
SUB TITLE: AGING AND THE USE OF ELECTRONIC COMMUNICATIONS NETWORKS

ABSTRACT:

The focus of the present project is on determining the optimal method for training older adults to use computers to fulfill information needs, leisure and instrumental activities, as well as whether computers can be used to provide social support through electronic bulletin boards. The research consists of two phases. In the first phase, young adult, young-old adults, and old-old adults are presented with three versions of instructions for accessing an on-line data base which provides for electronic grocery shopping, many varieties of information services, and an electronic bulletin board. Three formats of instructions are studied: those provided by the on-line service illustrated instructions presented in a manual with text, and illustrated instructions presented on the computer with text. Two types of training techniques are also studied: assisted and unassisted (simulating the condition of trying to learn a new system at home without help). In addition, individual differences measures of working memory, perceptual speed and text processing are used to determine which cognitive components are critical for acquisition of computer skills in the different age groups. In Phase 2, a bank of computers are banked in a local senior center and the training determined to be most effective in Phase 1 is used to train young-old and old-old adults to access the system. A long-term observation period of how frequently the system is used, by whom, types of errors made, and the types of changes effected in psychosocial measures over a 2.5 month period is studied. The research will result in generalized information about training and instructions for computers for older adults, specific manuals and software for an on-line data base service, and a profile of how the system is used most successfully by older adults, what the psychosocial outcomes are, and profiles of those most likely to use the system.

PROJECT NUMBER.....5 P50 AG11715-05

INVESTIGATOR NAME/ADDRESS  
PARK, DENISE C  
UNIV OF MICHIGAN INST SOCIAL  
RESEARCH  
426 THOMPSON STREET  
ANN ARBOR, MI 48106-1248

AWARD AMOUNT..... \$507,907

PERFORMING ORGANIZATION: UNIVERSITY OF MICHIGAN AT ANN ARBOR  
TITLE: CENTER FOR APPLIED COGNITIVE RESEARCH ON AGING

ABSTRACT:

There is a large and rapidly growing body of literature in the field of changes in cognition that occur with advance age. Based on this research, cognitive aging psychologists have made substantial gains in understanding the mechanisms, which account for age-related decline. As a result of this knowledge, cognitive aging psychologists are well positioned to use this information to design interventions, which will enhance the function of older adults in situations with cognitive demands. To date, however, little work in this area of applications has occurred. Thus, the primary goal of this proposal is to establish the Southeastern Center for Applied Cognitive Aging Research which will harness existing knowledge about age-related declines in cognition into applications. The center will fund a cadre of cognitive aging researchers who will work together to develop cognitive supports, training materials and programs based on cognitive principles that will enhance the ability of older adults to function in cognitively-demanding situations that are important for every-day function. The focus of the Center is on designing practical applications and interventions in domains that are critical to the older adult's ability to maintain community-dwelling status and to continue to function independently. The center is a consortium of three institutions (University of Georgia, Georgia Tech, & Memphis State) and four investigators who have a long history of collaboration in the area of cognitive aging. Senior investigators, Denise Park at the University of Georgia, and Arthur D. Fisk at Georgia Tech, are both experienced in applied and basic cognitive research and will work in concert with two of their former students (Wendy Roger at Memphis State and Roger Morrell at the University of Georgia) and with Neff Walker, an expert at Georgia Tech in motor control, to comprise the nucleus of the Southeastern Center. The goal of the Center is to not only expand the work of these primary investigators in applied cognitive aging, but also to draw upon the rich resources in cognitive aging in the area and use them to better define and develop the field of applied cognitive aging through a fellows program, a seed grant program, and through two national conferences. The Center has a core and three-research component. Denise C. Park will serve as Center Director and will administer the core. Her component project is on medication adherence in a group of low-SES hypertensive elderly. Roger Morrell will examine computer training strategies and the use of the computer as a social support system for elderly. Dan Fisk and Wendy Rogers will work on the development of a taxonomic framework for understanding age-related changes in human performance to be applied to automatic teller machines, bill evaluation, public transportation usage, and others. Specific products that will result from the Southeastern Center include software tutorials, training programs for computer usage, and specific techniques and devices (all inexpensive) which have been demonstrated to improve medication adherence in older adults.

PROJECT NUMBER.....5 P50 AG11715-05

INVESTIGATOR NAME/ADDRESS  
PARK, DENISE C  
UNIV OF MICHIGAN INST SOCIAL  
RESEARCH  
426 THOMPSON STREET  
ANN ARBOR, MI 48106-1248

AWARD AMOUNT..... \$169,302

PERFORMING ORGANIZATION: UNIVERSITY OF MICHIGAN AT ANN ARBOR  
TITLE: CENTER FOR APPLIED COGNITIVE RESEARCH ON AGING  
SUB TITLE: MEDICATION ADHERENCE IN LOW-SES HYPERTENSIVE ELDERLY

ABSTRACT:

Essential hypertension is a critical problem for older adults. There are 60 million or more Americans with hypertension, many of whom are aged. Hypertension is a particular problem among African American who are at much higher risk of hypertension than Caucasians. Grave consequences of uncontrolled primary hypertension include strokes, heart disease, and end stage renal disease. What is particularly tragic about hypertension is that extremely effective oral medication treatments for hypertension are readily available. Thus, a primary issue to control hypertension is ensuring that prescription medication is taken after it is dispensed. In the proposed research, a cognitive model for understanding medication adherence is applied to a sample of low-SEA African-American and Caucasian subjects who are middle aged to very old. Novel electronic devices to monitor adherence are used to provide accurate measures of medication-taking behavior. It is hypothesized that psychosocial variables, such as illness representation and depression, play a substantial role in medication adherence for younger adults, and these variables will be assessed. In older adults, however, there is growing evidence that age-related decline in cognitive function may play an important role in medication adherence, particularly for the oldest-old. In addition to assessing the magnitude of the adherence problem for hypertensive medications as well as other medications, the proposed research examines the effectiveness of different types of interventions--interventions designed to either alter an illness representation or support cognition. The interventions examined include providing patients with organizational charts and medication organizers to reduce comprehension and working memory load associated with the adherence burden, providing patients with external reminder devices to support prospective memory, or providing patient counseling to restructure the patient's illness presentation to be more consonant with a desire to adhere. The ultimate outcome of this project will be to develop profiles of individuals who are at high risk of nonadherence and provide practitioners with specific intervention strategies that are inexpensive and have been demonstrated to be effective in improving adherence.

## **Personality & Social Psychological Aging**

FY 1997 Abstracts -PSP GRANT

PROJECT NUMBER.....5 R01 AG13006-02

INVESTIGATOR NAME/ADDRESS  
ALDWIN, CAROLYN M  
UNIVERSITY OF CALIFORNIA  
HART HALL  
DAVIS, CA 95616

AWARD AMOUNT..... \$126,517

PERFORMING ORGANIZATION: UNIVERSITY OF CALIFORNIA DAVIS  
TITLE: MENTAL AND PHYSICAL HEALTH TRAJECTORIES IN ADULTHOOD

ABSTRACT:

DESCRIPTION (Adapted from the Investigator's Abstract): The primary purpose of this study is to develop ways of empirically clustering types of nonlinear mental and physical health trajectories, using 30 years of data from the Normative Aging Study (NAS), and to describe both the types of patterns that exist and the frequency of their occurrence. In addition to looking at cohort differences in these trajectories, the NAS data will be used to see if they are a function of personality, socioeconomic factors, and health behavior habits.

PROJECT NUMBER.....5 R01 AG13490-02

INVESTIGATOR NAME/ADDRESS

ANTONUCCI, TONI C

UNIVERSITY OF MICHIGAN

PO BOX 1248, ROOM 5100

ANN ARBOR, MI 48106-1248

AWARD AMOUNT..... \$134,458

PERFORMING ORGANIZATION: UNIVERSITY OF MICHIGAN AT ANN ARBOR

TITLE: CONVOYS OF SUPPORT IN OLD AGE--A CROSS NATIONAL STUDY

ABSTRACT:

This revised research application is designed to clarify and further specify how the Convoy Model of Social Relations can be used to improve our understanding of those characteristics of social relations which help the elderly to cope with and adapt to three common resource deficits: widowhood, financial strain, and illness. We propose to use the Convoy Model because it highlights characteristics of close family and friendship relationships, which are similar across countries, but also allows the culturally specific expression of these relationships. The life-span developmental perspective of the Convoy Model emphasizes individual development but also assumes that situational or environmental factors are important. We propose to examine sociocultural context and capitalize on the availability of four large randomly selected, community based samples from the United States, Japan, France and Germany that provide in-depth data on key concepts of the convoy model. Highlighting the heterogeneity of old age, we focus on a comparison of men and women who are the younger-old (60-69), the middle (70-79) and the older-old (80-89). We seek to identify the type and nature of convoys, which facilitate successful coping with major deficits and consequently enhance the well being of the elderly. Three specific aims guide the proposed research.

1. To examine the structure of Social Relations Convoys of the relatively young-, middle-, old-old elderly experiencing three major resource deficits (widowhood, financial strain, illness) in the United States, Japan, France and Germany.
2. To examine the connectedness of relationships, measured as types of exchanges and affective quality, between specific convoy members and the elderly in each of the four countries.
3. And finally, we seek to examine the impact of cultural influences on the Convoy Model of Social Relations among those experiencing specific resource deficits.

In sum, we believe that by extending this research to a cross national comparison we will be able to document those characteristics of the Social Relations Convoy which are universally associated with successful adaptation to these common resource deficits and those which vary within countries. This knowledge should facilitate the development of interventions, which could minimize the burden and maximize the adaptation experienced by older people, their families, friends, and communities.

PROJECT NUMBER.....1 R03 AG14855-01

INVESTIGATOR NAME/ADDRESS

ARDELT, MONIKA

UNIVERSITY OF FLORIDA

AWARD AMOUNT..... \$47,187

PO BOX 117330

GAINESVILLE, FL 32611-7330

PERFORMING ORGANIZATION: UNIVERSITY OF FLORIDA

TITLE: EMPIRICAL ASSESSMENT OF A THREE-DIMENSIONAL WISDOM SCALE

ABSTRACT:

The objective of the study is to develop a three-dimensional wisdom scale and to test its validity and reliability for use in large, standardized surveys of older populations. Long thought to be an efficacious predictor for many attributes of aging well, the construct of wisdom still lacks a coherent, directly testable scale. The proposed research will provide such a scale. Wisdom is operationalized and measured as a latent variable with cognitive, reflective, and affective effect indicators. This means that all three dimensions have to be simultaneously present for a person to be considered wise. A stratified sample of close-knit social groups of older adults (55+) from the Gainesville, FL, area will be drawn. The stratification variables are gender, race, and socioeconomic status composition of the group. The sample should contain approximately equal numbers of men/women, African Americans/Whites, and persons with high and low socioeconomic status. Sampling of social groups will continue until the number of study participants is 138 or above to generate an N sufficient for testing a scale. Respondents will be asked to complete a questionnaire that includes the newly constructed standardized wisdom scale, measures of mastery and social desirability, and questions about the respondents' general well-being and life conditions (life satisfaction, depression, health, financial situation, socioeconomic and marital status, etc.). Furthermore, they will be asked to nominate persons whom they would consider as wise from their social groups, excluding relatives. Seven hypotheses dealing directly with the validity and reliability of the proposed three-dimensional wisdom scale will be tested. Structural equation models with latent variables will be applied which take measurement error into account. It is hypothesized that those nominated as wise should score the highest on the latent variable "wisdom." In addition, the latent variable "wisdom" should be positively related to a person's psychological and physical well-being and mastery skills but uncorrelated to general life conditions. After about three months respondents will be contacted again to assess the test-retest reliability of the scale. A valid and reliable standardized self-administered wisdom scale would make it relatively easy for researchers to measure a person's degree of wisdom in large samples.

PROJECT NUMBER.....1 R01 AG14656-01

INVESTIGATOR NAME/ADDRESS

BELSKY, JAY

PENNSYLVANIA STATE UNIV

S-136C HENDERSON BLDG

UNIVERSITY PARK, PA 16802

AWARD AMOUNT..... \$57,668

PERFORMING ORGANIZATION: PENNSYLVANIA STATE UNIVERSITY-UNIV PARK

TITLE: INTERGENERATIONAL RELATIONS IN ADULTHOOD

ABSTRACT:

DESCRIPTION (adapted from investigator's abstract): By taking advantage of a unique, ongoing longitudinal study of some 1,000 young adults at age 26 (and their parents) in New Zealand who have been studied since age 3, this work is designed to advance understanding of the development of parent-child relationships across the lifespan. These young adults will be queried during a 20-minute interview about their relationships with their parents (at the current time) so that information on the emotional closeness of these relationships and the help received and provided to parents can be related to data collected prospectively during early childhood (ages 3 and 5), middle childhood (ages 7 and 9) and adolescence (ages 13 and 15) on parent-child relations and family climate. Parallel data on intergenerational relations during adulthood will be gathered by mail from the parents of the young adults so that multi-respondent, multi-indicator constructs of affectional, functional, and associational solidarity (between parent and adult child) can be created for use in structural equation modeling designed to assess, prospectively, direct and mediated effects of childhood experience on intergenerational relations in adulthood. Because there exists no such prospective studies of this subject originating in early childhood, this study of New Zealanders will break new ground in the study of the life course.

PROJECT NUMBER.....2 T32 AG00037-21

INVESTIGATOR NAME/ADDRESS  
BENGTSON, VERN L  
AUDRUS GERONTOLOGY CENTER  
3715 MCCLINTOCK  
LOS ANGELES, CA 90089-0191

AWARD AMOUNT..... \$272,536

PERFORMING ORGANIZATION: UNIVERSITY OF SOUTHERN CALIFORNIA  
TITLE: MULTIDISCIPLINARY RESEARCH TRAINING IN GERONTOLOGY

ABSTRACT

The purpose of this program is to provide a multidisciplinary context for research training in six scientific specialties in aging: biology/ neurogerontology, economics, linguistics, gerontology/ public policy, psychology, and sociology. The training program is designed to achieve three major goals: (1) that Trainees master the knowledge, methods, and theory of one scientific disciplines and their multidisciplinary contributions to cross-specialty research in aging; (3) the Trainees begin to develop productive research careers in aging by working closely with their Preceptor on research; presenting and publishing results of these projects; and developing their independent research agenda. Predoctoral Trainees complete an academic program based on Departmental requirements and develop research competence working on projects related to their Preceptor's research programs. Postdoctoral Trainees begin by gaining relevant research experience with their Preceptor and move toward independent research and publications. The multidisciplinary training of this program focuses on (1) the weekly Multidisciplinary Research in Aging Colloquium, required of all Trainees; (2) required and elective course offerings in aging from other Departments; (3) opportunities for involvement in cross-disciplinary research among Preceptors; (4) the expectations of Trainees will present papers reporting their research at national professional and multidisciplinary meetings. Funds are requested to support 12 predoctoral and 6 postdoctoral Trainees.

PROJECT NUMBER.....5 R37 AG07977-15

INVESTIGATOR NAME/ADDRESS  
BENGTSON, VERN L  
UNIV OF SOUTHERN CALIFORNIA  
3715 MCCLINTOCK  
LOS ANGELES, CA 90089-0191

AWARD AMOUNT..... \$690,936

PERFORMING ORGANIZATION: UNIVERSITY OF SOUTHERN CALIFORNIA  
TITLE: LONGITUDINAL STUDY OF GENERATIONS AND MENTAL HEALTH

ABSTRACT:

This research involves a 10-year follow-up of three-generation families, and the launching of 18-month time-series assessments, to examine the impact of family support on health-related crises. The major research questions are: (1) How does family support (reflected in six aspects or "solidarity") change over time? (2) To what extent are there changes in measures of mental health (seen in individual resources of incapacity that imply effective functioning) in the early, middle and later years of adulthood? (3) What is the relationship between family social support and mental health over time? Does the positive cross-sectional relationship between these two variables continue to be manifest in longitudinal assessments; how does family solidarity at one point in time predict coping with and adaptation to health-related crises that occur subsequently? Data to be collected will come from respondents to a 1973 study involving 516 elderly parents (G1, average age 67), their 701 middle-aged children or children-in-law (G2, average age 42 in 1973), and their 846 grandchildren (average age 19). The 1973 (T-1) data were obtained from two lengthy (1-1/2 hour) questionnaires mailed to members of three-generation families, sampled from membership lists of a large (840,000) prepaid medical health plan. It is estimated that 1,782 individuals and 303 primary G1-G2-G3 triads will have survived since 1973; an estimated 622 additional G3 spouses will yield a total sample of 2,416. These will be the T-2 and T-3 survey recipients. Two types of data will be collected and analyzed. The quantitative data will be comprised of comparable questionnaire batteries to enable 10-year (T-1 vs. T-2) and 18-month (T-2 vs. T-3) contrasts. Qualitative data (clinical/in-depth interviews) from families experiencing health crises (n=45) and matched controls (n=25) will focus on the process of family adaptation to health crises. Both types of data will reflect these constructs of family solidarity: self-concept; life events; depression; locus of control; health-related crises; and perceived changes in family relations.

PROJECT NUMBER.....5 R01 AG07607-07

INVESTIGATOR NAME/ADDRESS  
BLANCHARD-FIELDS, FREDDA H  
GEORGIA INST OF TECHNOLOGY

AWARD AMOUNT..... \$146,872

ATLANTA, GA 30332-0170

PERFORMING ORGANIZATION: GEORGIA INSTITUTE OF TECHNOLOGY

TITLE: ATTRIBUTIONAL PROCESSES IN ADULTHOOD AND AGING

ABSTRACT:

The proposed research examines adaptive cognition in adulthood in the way an individual interprets problem situations, i.e., causal attributions. Research in the first award period demonstrated that older adults made more interactive attributions (multiple factors) as well as more dispositional attributions (e.g., blamed the main character) than younger adults, in negative relationship situations. The oldest adults and adolescents also produced less dialectical thinking. The proposed research will attempt to explain these findings using a social cognitive framework. In order to understand mechanisms involved in attributional processing, age/cohort differences in a priori schemas reflecting values, attitudes, and beliefs and the degree to which relationship and achievement situations evoke schematic processing will be assessed. It is expected that increasing age, experience, and changing social roles and life circumstances will impact the accessibility of such social schemas, and thus, influence the type of attributions made. In addition, individual differences in beliefs, styles, and schematicity will be related to differences in attributions. In this way developmental changes in attributions can be clarified by understanding individual differences in relevant variables.

Five studies will assess schematicity and attributional processes of early adolescents (ages 13-15), adolescents (ages 16-19), youths, three mature adult groups (ages 30-59), young adults (ages 60-68), and old-old (ages 70-79) using varying samples. Studies 1 and 2 will examine age/cohort difference in schematicity for the attribution vignettes using both a free generation task for relevant schemas and a priming procedure assessing attitudes that are evoked automatically and nonconsciously. Study 3 will examine the relationship between schematicity and causal attributional reasoning in relationship and achievement situations. Study 4 will link developmentally- related variables (e.g., ego level), invariant response styles (e.g., intolerance for ambiguity), psychometric intelligence, and schematicity to differences in causal reasoning (Study 4). Finally, Study 5 will examine the relationship between causal attributional reasoning and emotional saliency of the situation.

The immediate aim of this 4-year project is to examine attributional reasoning in relationship and achievement situations in relation to cohort-related experience (e.g., schematicity), individual differences measures, and emotional saliency. The long-term perspective yields ways of assessing dysfunctional attributions in relationship situations as well as implications for adaptive coping in adulthood.

PROJECT NUMBER.....5 R01 AG04146-11

INVESTIGATOR NAME/ADDRESS

BOOTH, ALAN

PENN STATE UNIVERSITY

601 OSWALD TOWER

UNIVERSITY PARK, PA 16802

AWARD AMOUNT..... \$245,826

PERFORMING ORGANIZATION: PENNSYLVANIA STATE UNIVERSITY-UNIV PARK

TITLE: MARITAL INSTABILITY OVER THE LIFE COURSE

ABSTRACT:

DESCRIPTION (Adapted from Investigator's Abstract): To understand divorce and changes in marital quality over the life course, the investigators have already obtained four waves of interview data from a sample of people who were married when the study began in 1980 and one wave of data from their offspring. The proposal calls for conducting a fifth interview with the original sample, a second interview with offspring, and first interviews with offspring who have reached maturity since 1992. The proposed continuation would extend knowledge in two areas: investigators hope to provide a definitive answer to whether an up-turn occurs in marital relations in the later stages of the life course, and to examine the way in which marital quality is affected by age, marital duration, and life course transitions; they also intend to track the way in which parental marital quality and divorce are related to offspring well-being by including other dimensions of the early home environment.

PROJECT NUMBER.....5 R01 AG08816-07

INVESTIGATOR NAME/ADDRESS  
CARSTENSEN, LAURA L  
STANFORD UNIVERSITY

AWARD AMOUNT..... \$175,387

STANFORD, CA 94305-2130

PERFORMING ORGANIZATION: STANFORD UNIVERSITY  
TITLE: SOCIAL INTERACTION IN OLD AGE

ABSTRACT:

Findings uncovered during the initial grant period lead to the development of a theoretical model of social and emotional aging termed socioemotional selectivity theory. The theory holds that the constellation of social goals that motivate human behavior are reorganized over the life span, such that late in life the motivation for information seeking with social partners decreases and the motivation to regulate emotion increases. The five-year program of research described herein proposes to utilize experimental and naturalistic methods to test postulates derived from this theory. In particular, studies detailed herein will address the nature of observed age differences in the salience of emotion across the adult life span. The studies will; examine cognitive (Study 1) and motivational (Study 2) processes that may underlie the reliable emotion bias found in our earlier work, examine age differences in the type of information derived from facial expressions of emotion (Study 3) and illuminate the role of emotion themes in intergenerational interactions (Study 4). In addition, the research will address the role of self-affirmation and self-verification in social motivation in young and old age (Study 5) and examine in a field context individual differences in the experience and social context of emotion across the life span (Study 6). Together the studies will allow for further development of socioemotional selectivity theory as well as examine possible associated gains and losses that may occur with changing social motivations. The ultimate aim of the research program is understanding and maximizing social and emotional well being in late life.

PROJECT NUMBER.....1 F32 AG05810-01

INVESTIGATOR NAME/ADDRESS  
COTRELL, VICTORIA C

AWARD AMOUNT..... \$35,300

15220 SW TEAL BLVD, #1  
BEAVERTON, OR 97007

PERFORMING ORGANIZATION: OREGON STATE UNIVERSITY

TITLE: SELF-PERCEPTIONS IN INDIVIDUALS WITH ALZHEIMER'S DISEASE

ABSTRACT:

This study seeks to identify the goals and motivations of persons with early Alzheimer's Disease by using an integrated framework of possible selves, an important aspect of self concept, and self regulatory processes as identified in Bandura's cognitive social learning theory (1977). Specification of goals and motives of dementia patients is important since perceptions of self have been shown to predict behavior and emotional states in healthy elderly. By comparing the perception of future selves of both AD patients and healthy older adults, this study seeks to determine if the self-regulatory mechanisms of efficacy and outcome expectancy associated with those perceptions operate similarly in both groups of elderly. Differences in possible content of selves will be determined by comparing the frequency of domains selected by healthy controls and AD patients. The symmetry of those domains will also be compared. To determine whether personal efficacy and outcome expectancy associated with possible selves predicts self reported affect, anxiety, and goal directed activity in healthy controls and AD patients, separate multiple regressions will be conducted for each group. An  $r$  to  $Z$  transformation using Fisher's  $z$  will be used to test the difference between the two equations. Data will be collected through the interviews with mildly impaired AD patients and healthy controls using a previously developed questionnaire, which measures perceptions of future selves, and self-regulatory mechanisms and activities associated with the perceptions. Data regarding the positive and negative affect and anxiety will be provided by AD patients and healthy controls. A measure of awareness level of patients and controls will be used to identify bias that might be created by awareness deficits.

PROJECT NUMBER.....5 K08 AG00714-02

INVESTIGATOR NAME/ADDRESS  
COVINSKY, KENNETH E  
CASE WESTERN RESERVE UNIV  
11100 EUCLID AVE  
CLEVELAND, OH 44106-6033

AWARD AMOUNT..... \$85,941

PERFORMING ORGANIZATION: CASE WESTERN RESERVE UNIVERSITY  
TITLE: IMPROVING QUALITY OF LIFE IN ELDERS WITH MEDICAL ILLNESS

ABSTRACT:

The applicant's goal for this career development award is to develop the multidisciplinary skills required to become a leader in aging research. His developmental plans include focused research as well as a program of course work, tutorials, and directed readings. His research agenda is directed toward improving the quality of life of elders with acute and chronic illnesses.

The project for this career development award centers on using hospitalization as an opportunity to improve the long-term quality of life of elders. The supplicant has developed a preliminary framework of needs that can be addressed in the hospital to improve the quality of life and elders. This framework forms the basis for sustained career development as well as cumulative and incremental research. The proposal focuses on depression as the initial challenge to be addressed in this incremental research agenda. Depression is an important quality of life issue in hospitalized elders because it is common, poorly understood in the context of acute illness, seldom recognized by physicians, yet treatable when it is recognized.

The aim for this research proposal are to develop a better understanding of depression in the context of acute illness and to determine the characteristics of screening tests for major depression in hospitalized elders. Following the completion of this effort, the applicant will conduct studies to develop a better understanding of other quality of life needs within the context of hospitalization and develop better methods of assessing these needs. He expects these efforts to culminate with an application for independent funding to develop an intervention program to use hospitalization as an opportunity to improve the long-term quality of life of acutely ill elders.

The applicant brings to this application training in internal medicine and clinical epidemiology. His goal of developing the multidisciplinary skills required to be a leader in aging will be accomplished through a focused research project, a sponsorship team encompassing multiple disciplines, as well as tutorials and course work designed to expand the applicant's conceptual framework and methodological skills. Case Western Reserve University (CWRU) has a long-standing commitment to developing programs in gerontology research. The applicant's principal sponsor directs the research and development core of the CWRU Pepper Center and has been the PI for studies designed to improve outcomes in hospitalized elders. He will assure the applicant advanced training in clinical epidemiology and geriatrics. The applicant's multidisciplinary team of secondary sponsors will guarantee in-depth training in areas critical to the applicant's development.

PROJECT NUMBER.....5 R01 AG11220-04

INVESTIGATOR NAME/ADDRESS  
FIELD, DOROTHY  
CALIFORNIA PUB HLTH FDN  
1681 SHATTUCK AVE, #H  
BERKELEY, CA 94709

AWARD AMOUNT..... \$122,010

PERFORMING ORGANIZATION: PUBLIC HEALTH INSTITUTE  
TITLE: RELATIONSHIP PRECURSORS OF WELL BEING IN OLD AGE

ABSTRACT:

A long-term longitudinal, intergenerational study of the precursors of social relations and psychological well-being in old age is proposed that will utilize two unique, rich data sets. The two samples are the Berkeley Older Generation Study, a group that was interviewed in young adulthood, middle age, young-old age, and old-old age, and the equally long-term Berkeley Growth and Guidance Study, comprising the children of the Berkeley Older Generation Study participants, whose members were interviewed in childhood, adolescence, young adulthood, and middle age. The data from these two samples, collected for more than 50 years, will be drawn upon in an interconnected way to assess continuity and change in social relations during old age and the influence of within-family and beyond-family relations on psychological well-being. The influence of the health of the elderly participants on well-being and social relations will be a focus of many analyses, including path modeling and several measures that examine change over time.

The first research aim is to carry out a longitudinal examination of intergenerational relations (emotional involvement as well as contacts), as perceived by and independently reported by both generations across a span of 36 years: when the children were 17, 40, and 53 years old, and the parents were (on average) 46, 69, and 83. It is hypothesized that the child's perceptions of the relationship will concurrently and prospectively influence the parent's perceptions of the relationship, which in turn will influence the parent's well-being in old age. The second research aim is to use the Berkeley Older Generation Study data to examine continuity or change in psychological well-being during the crucial transition period between young-old and old-old age and how this is predicted by health, by intellectual functioning, and by within-family (spouse, children, grandchildren, and siblings) and beyond-family (friends and voluntary organizations) relations. It is hypothesized that the predictors of well-being are not always the same in young-old and old-old age. The research is designed to increase our understanding of the association between internal, developmentally-driven change and environmentally-linked events throughout adulthood, and their influence on well-being in old age.

PROJECT NUMBER.....1 R03 AG14484-01

INVESTIGATOR NAME/ADDRESS

FINGERMAN, KAREN L  
PENNSYLVANIA STATE UNIV  
S-118 HENDERSON BLDG  
UNIVERSITY PARK, PA 16802

AWARD AMOUNT..... \$66,597

PERFORMING ORGANIZATION: PENNSYLVANIA STATE UNIVERSITY-UNIV PARK  
TITLE: ADULTS REASONING ABOUT PROBLEMS IN SOCIAL RELATIONSHIPS

ABSTRACT:

The deleterious effects of negative social interactions for psychological well-being have been clearly established. Older adults consistently report fewer problems in their close social relationships than do younger adults. Decreased interpersonal tensions do not appear to reflect dissolution of difficult relationships. Rather, older adults appear to think about and manage interpersonal problems differently than do younger adults. The proposed study addresses social cognitive processes underlying management of problems in social relationships across adulthood. Twenty well educated, healthy men and women in each of 4 different age groups: 20-29, 40-49, 60-69, and 80+ will participate. To date, few studies of social cognition have differentiated young-old from old-old participants. Reasoning about interpersonal problems will be assessed by asking participants how they manage tensions with people whom they have named in a network of their closest social ties and with people whom they have named in a network of their most distressful social ties. Open-ended responses will be coded building on previous research. Older adults are expected to use more integrated approaches to manage relationship problems and to accept the other person's weakness. Younger adults are expected to engage in more active efforts to communicate and to change the other person. The proposed study has implications for interventions with older adults who are experiencing interpersonal problems. Current psychological practice emphasizes direct communication to resolve relationship difficulties, but different approaches may be more appropriate for older populations.

PROJECT NUMBER.....5 R01 AG08825-07

INVESTIGATOR NAME/ADDRESS  
FRIEDMAN, HOWARD S  
UNIVERSITY OF CALIFORNIA

AWARD AMOUNT..... \$93,581

RIVERSIDE, CA 92521

PERFORMING ORGANIZATION: UNIVERSITY OF CALIFORNIA RIVERSIDE  
TITLE: PREDICTORS OF HEALTH AND LONGEVITY

ABSTRACT:

The research of this revised competing continuation grant will examine the relationships between longevity/cause of death and key behavioral and psychosocial predictors. In particular, this research will test hypothesized relations between major stressor patterns and response patterns earlier in life and subsequent premature death in middle and old age. The design is an archival prospective cohort study. The raw data come from the longitudinal Terman Life Cycle Study, begun in 1921 by L. Terman and continued by R. Sears and others, plus additional data on cause of death recently collected in the ongoing research. The subjects are 857 men and 671 women followed from their childhood in the 1920's until the present, the longest continuous cohort study ever conducted. In the ongoing research, reliable indices of childhood personality, childhood stress (e.g. broken families), adult health behaviors (alcohol use, smoking, body mass), actual and perceived social support, and related indices have been created or gathered, and it has been established through statistical survival analyses that some of these key variables predict longevity across the life-span. The planned research involves the explaining of cause of death and longevity--i.e. the testing of models.--employing these and related psychosocial stresses and resources. Significant questions in behavioral medicine, psychosocial epidemiology, and health psychology involving the long-term effects of conscientiousness, optimism' social ties, and health-relevant behaviors (smoking, drinking, overeating, exercise) will be addressed using survival analyses, supplemented by logistic regression analyses as appropriate. Male/female differences in longevity, including documented differences in longevity correlates of marriage, also will be examined further in an attempt to shed light on puzzling gender differences. This study will thus provide important information relevant to our understanding of the influence of social, individual, and behavioral factors on longevity and cause of death across the life span.

PROJECT NUMBER.....1 R03 AG15158-01

INVESTIGATOR NAME/ADDRESS

HARWOOD, JAMES T

UNIV OF KANSAS

4089 DOLE

LAWRENCE, KS 66045

AWARD AMOUNT..... \$71,443

PERFORMING ORGANIZATION: UNIV OF KANSAS

TITLE: INTERGENERATIONAL COMMUNICATION SCHEMA--CONTENT/STRUCTURE

The role of social cognitions in influencing intergenerational communication has been previously demonstrated. For instance, it is now accepted that particular negative stereotypes of older adults may lead to the use of patronizing speech to those individuals. The proposed research aims to study a particular realm of social cognition that has not been examined – schemas relating specifically to intergenerational interactions. It is argued that cognitive representations of conversations may be more influential than representations of people in determining the successful enactment of intergenerational communication. Two studies are proposed. In the first study, 40 older adult and 40 younger adult participants will be interviewed regarding their thoughts about intergenerational conversations. They will be asked to provide accounts of intergenerational conversations with different types of partners, and will be probed for details regarding the affective experience, content, and process of such encounters. The interviews will be coded by investigators to derive common “types” of intergenerational conversations. These types will then be coded for their relative level of elaboration and accessibility, and for complementary between younger and older adults’ types. In the second study, younger and older adults will perform a sorting task on short exemplars of these types. This task will provide data for cluster analysis and multidimensional scaling. These analyses will provide validation for the conversation types emerging from the first study. In addition, the analyses will uncover the cognitive organization of the types, both in terms of their hierarchical structure and underlying dimensions. Stable types emerging from the two studies would be termed Intergenerational Communication Schemas (ICS’s). The proposed studies will provide the grounding for an extensive program of experimental research examining the role of ICS’s in influencing intergenerational conversations.

PROJECT NUMBER.....1 R15 AG13023-01

INVESTIGATOR NAME/ADDRESS  
JACOB, SUSAN R  
UNIVERSITY OF MEMPHIS

AWARD AMOUNT..... \$104,831

MEMPHIS, TN 38152

PERFORMING ORGANIZATION: UNIVERSITY OF MEMPHIS

TITLE: STRUCTURED GRIEF SUPPORT GROUP EFFECT ON OLDER ADULTS

ABSTRACT:

DESCRIPTION: (Adapted from applicants abstract) The death of a spouse is one of the most devastating life events. Conjugal bereavement in older adults is characterized by emotional distress, physical symptoms, increased use of health services, and a higher morbidity and mortality rate in surviving spouses. Effective bereavement interventions can have significant long term implications for reducing grief intensity and improving health. However, existing research consists of few studies which evaluate the effectiveness of various interventions. This study will use quantitative and qualitative methods to compare the efficacy of two different types of bereavement intervention programs: standard hospice bereavement care which consists of mailed bereavement literature, phone contact, 1 home visit made by a hospice team member, and an invitation to a quarterly open support group; and enhanced bereavement care, which consists of a closed structured support group that meets once a week for 6 weeks and is led by a trained professional. Specific aims are to: 1) Compare the efficacy of an enhanced bereavement intervention program to the standard hospice bereavement care in reducing grief intensity and improving health of older bereaved spouses of hospice patients over time, and 2) Describe the demographic variables (gender, race, education, length of illness, and length of marriage) which correlate with grief intensity and health in both groups of older bereaved adults. A quasi experimental repeated measures factorial design with one preintervention and three postintervention measurements will be used. Conjugally bereaved older adults (N=162), bereaved 1-2 months, over age 60 and able to communicate in English, will be randomly assigned to the two intervention groups (Standard and Enhanced) for 6 weeks. Grief intensity will be measured using the Revised Grief Experience Inventory (RGEI) and health will be measured using the Rosencranz Health Index and a 10 point Likert Scale Cantril Ladder pre and post intervention, and at 6 months and 12 months post intervention. Primary statistical analysis will be the ANCOVA of 2x2x2x4 (group x gender x race x time) repeated measures with covariates (education, length of illness, and length of marriage) retained from multiple linear stepwise regression. Based on significant main and interaction effects, appropriate post hoc tests will be run. Results will identify the effects of a closed structured support group on reducing grief intensity and promoting the positive health of older black and white men and women over time. Gender and racial similarities and differences in grief intensity and health over time will be identified.

FY 1997 Abstracts -PSP GRANT

PROJECT NUMBER.....3 R25 AG11953-04S1

INVESTIGATOR NAME/ADDRESS

JONES, JAMES M

APA

AWARD AMOUNT..... \$59,443

750 FIRST STREET NE

WASHINGTON, DC 20002-4242

PERFORMING ORGANIZATION: AMERICAN PSYCHOLOGICAL ASSOCIATION

TITLE: PREDOCTORAL RESEARCH SCIENTIST PROGRAM IN PSYCHOLOGY

ABSTRACT:

The Minority Fellowship Program administered by the American Psychological Association identifies ethnic minority predoctoral students in psychology with an interest in aging research and facilitates their entry into research programs in adult development and aging; establishes a network of researchers, trainees and mentors in aging research that provides a national infrastructure for the expansion of ethnic minority research in aging; increases the number of ethnic minority persons interested in pursuing doctoral study in psychology with a focus on research in adult development and aging related to ethnic minority populations; provides enhanced career development opportunities to ethnic minority aging researchers through involvement with national programs of the National Institute on Aging, the American Psychological Association, and the Gerontological Society of America.

The Minority Fellowship Program recruits and selects trainees from a national applicant pool and places four new trainees per year in selected psychology programs that offer specialized research training in aging. Each trainee receives two years of support making a total of twelve trainees supported during the project period. Consortium/contractual arrangements are established with the training institutions to ensure that they provide matching funding, pay wages consistent with local standards, assign a mentor to work closely with the trainee, involve the trainee in relevant research related to an aging ethnic minority population, and prepare the trainee for a research career in gerontology. The Minority Fellowship Program monitors each trainee's progress annually, provides individualized mentoring, arranges enrichment activities for trainees, and develops a network of ethnic minority researchers in aging.

PROJECT NUMBER.....5 R37 AG07823-09

INVESTIGATOR NAME/ADDRESS

KAHANA, EVA F

CASE WESTERN RESERVE UNIV

10900 EUCLID AVENUE

CLEVELAND, OH 44106-7124

AWARD AMOUNT..... \$191,147

PERFORMING ORGANIZATION: CASE WESTERN RESERVE UNIVERSITY

TITLE: ADAPTATION TO FRAILTY AMONG DISPERSED ELDERLY

ABSTRACT:

The purpose of this research is to gain a better understand of adaptation of elderly living in a retirements community as they approach old-old age and face increasing frailty.

The proposed study seeks an in-depth understanding of personal (psychological and economic), environmental and social resources and services needs of old-old residents of a Florida retirement community. It aims to test a conceptual model for predicting continued psychosocial well-being and independent living of old-old who experience health problems. In the framework of this model, the buffering roles of diverse personal, environmental and social resources are explored in diminishing the adverse effects of ill health in late life. The model will be tested as it predicts components of psychosocial well-being and of outcomes of residential relocation to more sheltered settings. A three-wave longitudinal design is proposed with follow-ups at one year intervals and a fourth year status check.

The sample will be comprised of 800 old-old (age 75+) residents of a large Florida retirement community. Only respondents who are in good functional health and free of major mental impairments will be included in the longitudinal study. Personal interviews will obtain data during an initial interview and two follow-up interviews. Telephone interviews will be conducted with respondents who relocated outside Florida, with all respondents at the fourth year status check and with families of those respondents who have become uninterviewable or who have died in the course of the study.

The study will provide detailed information on respondent's social support networks, documenting the types of resources exchanged, the directionality of exchanges and satisfaction with the relationships for both formal and informal supports. Data analyzes will also provide a description of the stability of personal, environmental and social resources and of outcomes. They will also yield information about the role of diverse resources in buffering the impact of illness on psychosocial outcomes and on residential stability. A carefully designed measurement model, coupled without longitudinal designed, provides the basis for testing our causal model. Data analysis will utilize multivariate and structural equations with multiple indicator models to assess lagged, instantaneous and reciprocal effects of our causal model. Event history analysis will be conducted to examine predictors of discrete events.

PROJECT NUMBER.....1 R01 AG13636-01A1

INVESTIGATOR NAME/ADDRESS

KAUFMAN, SHARON R

UNIV OF CALIFORNIA

BOX 0612/N631

SAN FRANCISCO, CA 94143-0612

AWARD AMOUNT..... \$139,593

PERFORMING ORGANIZATION: UNIVERSITY OF CALIFORNIA SAN FRANCISCO

TITLE: ELDERLY AND THE EXPERIENCE OF DYING IN THE HOSPITAL

ABSTRACT:

The goal of this 4-year qualitative study is to describe and examine how dying and death are approached and understood by health professionals, patients, and families; and to examine how dying and death occur among older adults in one community hospital. This will be an empirical, ethnographic investigation based on the collection of data by interviews with physicians, nurses, patients, and families and by participant-observation at formal and informal health care team meetings on seven units in the hospital setting. The study has five specific aims: 1) to provide a descriptive account of hospital deaths among older persons and reactions to them; 2) to learn what dying means to the dying person and how it is defined and understood by others; 3) to investigate the knowledge and values through which physicians, nurses, patients, and families make treatment decisions; 4) to discover how and the extent to which assumptions about dying and hospital practices surrounding death are mediated by age; and 5) to investigate how decisions about dying are influenced by policies governing payment and liability, and by legal prerogatives that control consent, advance directives, and surrogate decision-making.

Coding-based qualitative data analysis will be used. Three distinct approaches of this technique will be employed for the analysis of both interview material and fieldnotes generated from participant-observation: 1) cross-sectional comparison, in order to describe discrete patterns of thought, opinion, and practice, and the variations therein; 2) thematic analysis and the case study approach, to identify themes that emerge within a specific case; and 3) frequencies of response, in which frequencies of themes, categories, and other variables are generated. The interpretive goal of the project is to examine some of the conflicting and ambiguous features of dying that emerge in team meetings and that interview respondents describe, and to reveal some of the social and cultural sources of deficient models of care and patient and family suffering so that new models can be proposed.

PROJECT NUMBER.....5 R01 AG09221-05

INVESTIGATOR NAME/ADDRESS

KRAUSE, NEAL M

UNIVERSITY OF MICHIGAN

1420 WASHINGTON HEIGHTS,

M5017

ANN ARBOR, MI 48109-2029

AWARD AMOUNT..... \$242,981

PERFORMING ORGANIZATION: UNIVERSITY OF MICHIGAN AT ANN ARBOR

TITLE: WELL BEING AMONG AGED--PERSONAL CONTROL AND SELF ESTEEM

ABSTRACT:

DESCRIPTION (Adapted from applicant's abstract): The purpose of this application is to seek funds to continue work on the NIA-supported project, "Well-Being Among the Aged: Personal Control and Self-Esteem" (R01 AG-09221). The first three years of this project (1991-1993) were devoted to conducting a face-to-face nationwide survey of 1,103 older adults. Role-specific measures of stress, control, and self-worth were developed to test the following hypotheses: (1) that events arising in highly salient roles exert an especially noxious impact on well-being; (2) that these deleterious effects operate by eroding feelings of control and self-esteem associated with the roles in which these stressors emerged; and (3) that support provided by significant others tends to offset the impact of salient role stressors by bolstering role-specific feelings of control and self-worth. The application seeks to build upon these findings by conducting two reinterviews with the participants in the baseline survey. This data will allow us to address the following new objectives: 1. To describe aggregate as well as individual-level change in multiple dimensions of stress, social support, personal control, self-esteem, and distress; 2. To estimate a series of three-wave panel models in order to evaluate the temporal ordering among the constructs listed above; 3. To assess whether levels of stress, social support, self-esteem, personal control, and distress vary across eight social roles when these roles are valued highly by older adults; 4. To estimate a latent variable model that is designed to see if specific kinds of stressors, social support, and feelings of control influence the selection of particular kinds of coping responses; 5. To examine the effects of role transitions on distress; 6. To assess whether specific types of salient role stressors exert a differential impact on depressive symptoms; 7. To explore whether social support provided in one role (e.g., the parental role) offsets the effects of stress arising in another role (e.g., the marital role); 8. To see whether the value placed on social roles influences whether the effects of stressors arising in one role spill over into another role.

PROJECT NUMBER.....5 R37 AG07001-10

INVESTIGATOR NAME/ADDRESS

LAWTON, M POWELL

PHILADELPHIA GERIATRIC CTR

5301 OLD YORK ROAD

PHILADELPHIA, PA 19141

AWARD AMOUNT..... \$137,740

PERFORMING ORGANIZATION: PHILADELPHIA GERIATRIC CTR-FRIEDMAN HOSP

TITLE: AFFECT NORMAL AGING AND PERSONAL COMPETENCE

ABSTRACT:

This research will investigate affectivity in normal aged and younger people. The goals are (1) to compare the structure of affect in older and younger people, (2) to determine the dimensions of affective experience as they are confirmed in older, middle-aged, and younger normal people, and (3) to test some hypotheses about the relationship between personal resources (environmental proactivity and affective self-regulation), environmental resources, affective openness, and psychological well-being, and how these relationships vary as the physical health of the older person varies. The two central affective constructs, affective self-regulation and affective openness, are viewed as having an optimal relationship when self-regulation leads to openness and the ability to utilize the resources of the environment most fully. The project will begin with a pilot period continuing pilot work already completed and then move to the 3 phases noted above, by recruiting verbally facile older subjects from retirement communities and Elderhostel sites. The PI's proactivity-docility model of aging and environment will be extended by the results.

PROJECT NUMBER.....5 R01 AG11995-03

INVESTIGATOR NAME/ADDRESS

LAWTON, M POWELL

PHILADELPHIA GERIATRIC CTR

5301 OLD YORK ROAD

PHILADELPHIA, PA 19141

AWARD AMOUNT..... \$323,798

PERFORMING ORGANIZATION: PHILADELPHIA GERIATRIC CTR-FRIEDMAN HOSP

TITLE: QUALITY OF LIFE, HEALTH, AND VALUATION OF LIFE BY ELDERS

ABSTRACT:

Quality of life (QOL) in older people with chronic illnesses will be investigated in terms of how it contributes to the valuation of life (VOL). VOL is the subjectively experienced worth of the person's present life, weighted by the multitude of positive and negative features in both the person and the environment. The research will extend existing research on health utility or healthy-state preferences by (a) using elders ages 70+; (b) investigating differences in VOL among those who are in versus those not in states of compromised health; (c) measuring the contributions of positive features of VOL as well as the traditional negative features. 400 subjects will be recruited from the Albert Einstein and Philadelphia Geriatric Center community: Discharged inpatients, outpatients, and nonpatients, stratified by gender, race, and socioeconomic status (5 Ss per cell). They will be recruited to exclude the cognitively impaired but to represent a broad range of physical health. Standard interviewed-based assessment instruments will be used to measure QOL and psychological well-being plus new ones designed to measure VOL: Years of desired life, a VOL scale, and an open-ended interview eliciting attitudes toward the future, present and future goals, and "personal projects." Specific hypotheses and a structural model of psychological well-being and VOL based on Lawton's model of the good life will be tested. A "positive path" and a "negative path" are hypothesized to make independent contributions to psychological well-being and to VOL. A prospective cohort study will be performed on subgroups of subjects. The effect of health decline vs. health stability on Life Extending Treatment Preferences will be tested on 160 subjects who survive for 24 months. Actual use of life extending treatment will be determined for those who die, and QOL and VOL predictors of such use determined.

PROJECT NUMBER.....5 R29 AG12731-03

INVESTIGATOR NAME/ADDRESS

MARKS, NADINE F

UNIVERSITY OF WISCONSIN

1300 LINDEN DRIVE

MADISON, WI 53706

AWARD AMOUNT..... \$96,087

PERFORMING ORGANIZATION: UNIVERSITY OF WISCONSIN MADISON

TITLE: SOCIOECONOMIC INEQUALITIES, GENDER, AND MIDLIFE HEALTH

ABSTRACT:

DESCRIPTION: The Wisconsin Longitudinal Survey and the National Survey of Households and Families will be used to examine the relation of social background characteristics, particularly socioeconomic status, to four theoretically related domains of health outcomes--health perceptions, functional limitations, symptoms of impairment, and death. Related investigations will examine stress events, psychological states and social resources as mediating factors related to background characteristics, to each other, and to health behaviors and outcomes. A separate investigation also is contemplated that will emphasize women's health outcomes associated with menopause and other reproductive system problems in particular. The inclusion of each of these facets of the research design (background factors, proximate stresses and resources, health behaviors and health outcomes) are derived from the corpus of extant research, and related to one another in a coherent theoretical framework.

PROJECT NUMBER.....5 R01 AG12113-03

INVESTIGATOR NAME/ADDRESS  
MC AULEY, EDWARD  
UNIVERSITY OF ILLINOIS  
906 S GOODWIN AVENUE  
URBANA, IL 61801

AWARD AMOUNT..... \$314,708

PERFORMING ORGANIZATION: UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN  
TITLE: EXERCISE, AGING, AND PSYCHOLOGICAL FUNCTION

ABSTRACT:

A multidisciplinary investigation is proposed to examine the role played by aerobic exercise in enhancing the psychosocial and cognitive functioning of 200 aging adults (60-74 years). A randomized trial will compare effects of an aerobic exercise intervention and a stretching and toning control group engaged in activity for six months in supervised programs with a six month follow-up. It is expected that aerobic exercise program will substantially enhance the physical fitness post-intervention of these subjects and that changes in fitness will result in improved cognitive function (memory and attention) and enhanced psychosocial function (improved psychological well-being and self-efficacy). Whereas it is believed that the particular mechanism of importance in the exercise-cognition relationship is cardiovascular fitness, it is hypothesized that self-efficacy mediates the impact of fitness on psychological well-being. Finally, a true representation of psychological or mental health comprises adequate cognitive function and positive psychological well-being. It will therefore be a further purpose of this project to conduct exploratory analyses examining the relationship between cognitive and psychosocial responses at the end of the program and at follow-up. Both treatment groups are expected to demonstrate relatively low levels of functioning (physical, cognitive, and psychosocial) at baseline and that levels of functioning in the aerobic exercise group will increase markedly over the course of the program as compared to the stretching/toning group. Indeed, if both groups were to demonstrate similar increases in cognitive and psychosocial functioning but differ in degree of aerobic fitness gains (i.e., aerobic will make more marked improvements than the stretching/control group), this would be strong evidence to suggest that fitness gains are not necessary for psychological health improvements, a significant contribution in itself. This investigation attempts to overcome many of the methodological and conceptual problems that make the extant literature in this area equivocal at best. First, the proposed project is theoretically grounded rather than descriptive. Second, the sedentary aging population targeted represents a segment of the population which stand to gain more from exercise than those populations normally studied. Third, multi-method assessment across projects of exercise behavior and physiological function (exercise logs, long-term follow-up, cardiorespiratory function, heart rate), and psychological functioning (memory, attention, efficacy, affect) will be employed, allowing us to comprehensively measure the variables of interest and to determine treatment effects on these constructs, as well as possible interrelations among them. Finally, we include equal numbers of males and females, an appropriate proportion of minorities to be representative of the general older population in the region, and the exercise intervention is to be compared to a non-aerobic control group. The proposed investigation represents a prospective intervention study that is theoretically grounded and has as its objective a comprehensive approach to improving the health and well-being of older Americans.

PROJECT NUMBER.....5 R01 AG12393-04

INVESTIGATOR NAME/ADDRESS

MIROWSKY, JOHN

OHIO STATE UNIVERSITY

190 NORTH OVAL MALL

COLUMBUS, OH 43210

AWARD AMOUNT..... \$211,266

PERFORMING ORGANIZATION: OHIO STATE UNIVERSITY

TITLE: AGING, STATUS, AND THE SENSE OF CONTROL

ABSTRACT:

Broad objectives. The main objective is to describe and explain the relationship between age and changes in the sense of control over one's life.

Specific aims. Two cross-sectional pilot surveys (One Illinois, one U.S.) show that the average sense of control declines at an accelerating rate in successively older age groups. The proposed study will measure changes in the sense of control over a follow-up period, correlate the changes with age, and test hypotheses about the form and components of the association. The main hypotheses are: (I) over a period of time, the sense of control declines by an amount that increases with age; (II) the change in sense of control reflects an underlying change in biosocial function, which declines more rapidly with age; (III) higher social status slows the decline in the sense of control, possibly by preserving biosocial function; (IV) the lower the sense of control at the beginning of a period, the more it drops over the period, so the decrease gets steeper with age, and (V) changes in biosocial function and in the sense of control have deviation-amplifying reciprocal effects that accelerate age-dependent changes in the sense of control.

Health relatedness. If Rodin's theory of aging dynamics is correct, a sense of control over one's life increases active participation and improves emotional well-being and physical function, which in turn bolsters the sense of control. Emotional well-being and physical function are health factors themselves, and they decrease subsequent morbidity and mortality.

Study design and methods. The study will survey a national sample of persons ages 18 and over. Respondents will be selected at random, interviewed by telephone, and interviewed again three years later. The probability of being sampled will increase with age, to ensure an adequate sample of older persons. The analysis will specify models that test the hypotheses and address technical issues (correlated error, non-random attrition, and interactions or polynomials in structural equation models).

PROJECT NUMBER.....1 R03 AG15186-01

INVESTIGATOR NAME/ADDRESS  
POND, SAMUEL B, III  
NORTH CAROLINA STATE UNIV  
BOX 7801  
RALEIGH, NC 27695-7801

AWARD AMOUNT..... \$73,750

PERFORMING ORGANIZATION: NORTH CAROLINA STATE UNIVERSITY  
TITLE: ADAPTATION AND GOAL ORIENTATION

ABSTRACT:

The primary purpose of this study is to further our understanding of how people adapt to changing life circumstances with age, and to identify factors associated with specific contexts that influence the manner and course of this adaptation process. A major task for individuals as they age is to maintain a strong self-concept and sense of well-being in the face of an increase in perceived and real negative changes in biological, psychological, and social realms (e.g., reduction of physical resources, declines in memory skills, loss of social status). Interestingly, research supports the notion that most older adults adapt quite well to aging in the absence of deteriorating health. Understanding the mechanisms behind successful adaptation may help us in our ability to promote successful aging. Recent research has suggested that one way in which adaptation occurs is through shifts in goal-oriented coping responses. Specifically, as personal resources for dealing with blocked goals decline with age in adulthood, it appears that it is adaptive for the individual to abandon a goal orientation that relies on direct action and to adopt one that has a more cognitive focus involving changing or rescaling aspirations. Older adults who make such a transition appear to be the ones who navigate the aging process best. Up to now, much of the research in this realm has been somewhat limited and general in nature, with little examination of how these goal orientations influence adaptation in specific contexts and, conversely, how specific contexts moderate the developmental path identified for these orientations. For example, in addition to age-related variations in personal resources, it is reasonable to assume that the favorableness of context-specific conditions for goal achievement will also affect the developmental course of goal-directed coping styles. In addition, it is not clear how general goal orientation will affect perceptions of self and circumstances in specific contexts. In the proposed study, we seek to examine the interaction between general goal orientation and context-specific circumstances in order to better understand the factors that influence adjustment with aging.

PROJECT NUMBER.....5 R01 AG07410-05

INVESTIGATOR NAME/ADDRESS  
REITZES, DONALD C  
GEORGIA STATE UNIVERSITY  
UNIVERSITY PLAZA  
ATLANTA, GA 30303-3083'

AWARD AMOUNT..... \$238,565

PERFORMING ORGANIZATION: GEORGIA STATE UNIVERSITY

TITLE: ROLES AND SELF--FACTORS IN DEVELOPMENT AND RETIREMENT

ABSTRACT:

DESCRIPTION: (Adapted from Investigator's Abstract) In this study, we use symbolic interaction theory, a broad sample including men and women representing a full range of social backgrounds, and a longitudinal design to provide both a frame of reference and a data set for a better understanding of the transition into retirement and to link adjustment to retirement to the broader processes of later life socialization. The proposed data set will enable us to explore four sets of important theoretical and substantive issues: (1) the contrasting predictions of identity continuity, identity crisis, and role realignment theories on the effects of retirement; (2) the activity and social support theory hypotheses that social interaction may reduce some of the potential disruptive effects of retirement; (3) the long neglected questions of whether older females are less satisfied than men in their retirement; and (4) Atchley's (1976) suggestion that there may be temporal variations in adjustment to retirement. A sample of 800 metropolitan Atlanta men and women between the ages of 58 and 64 enable a longitudinal analysis of the influences of pre-retirement social background characteristics, attitudes, and behaviors on post-retirement mental health and involvements. In addition, we propose to interview respondents in the first month of their retirement and then again 6 months, 12 months, and 24 months after retirement in order to better understand the process by which individuals adjust over time to retirement. The data set is special, in that it focuses on multiple roles (not just the work role), contains a rich and diverse set of self variables (role/identity, social commitment, psychological commitment, salience, self-esteem) and role involvements (attention, energy, time, and subjective time), subjective meanings (health, retirement, income adequacy, and judgments about work), as well as a comprehensive set of social network, activity, and social background measures. LISREL will be used to develop structural equations and empirically test the hypotheses and for the effects of a wide range of statistical interactions. The study will provide a clearer picture of the social psychological processes and consequences of retirement, which is valuable not only to social research and theory but can be directly applied to counseling programs to help retired and older people maintain productive and meaningful lives.

PROJECT NUMBER.....5 R01 AG11233-04

INVESTIGATOR NAME/ADDRESS  
RUBINSTEIN, ROBERT L  
PHILADELPHIA GERIATRIC CTR  
5301 OLD YORK ROAD  
PHILADELPHIA, PA 19141

AWARD AMOUNT..... \$50,939

PERFORMING ORGANIZATION: PHILADELPHIA GERIATRIC CTR-FRIEDMAN HOSP  
TITLE: CHRONIC POVERTY AND THE SELF IN LATER LIFE

ABSTRACT:

The major specific aim of the proposed 42 month research project is to explore the relationship of chronic, lifelong poverty to notions of personal and cultural identity in later life. Thus the focus is on the personal meaning and experience of chronic poverty from the perspective of old age. While the incidence of poverty among the aged has declined in the last decades (although it has recently continued to rise), in reality, some 12% of elders were poor and 8% near poor in 1990; chronic poverty among a large segment of the aged has been an unremitting feature of life. Little specifically is known about the experience of chronic poverty in later life and in life course perspective and about the effects of this on self and identity.

This is an anthropological study of personal meaning, this defined as each person's interpretation or version of her own life, abstracted from shared, cultural meanings and individual experience. Key questions to be addressed in the proposed research include the following: What is the experience of life long and current poverty: What is it like to have been poor all your life and now be old? How do poor elders compare themselves to other elders? How do notions of what the life course as a sociocultural construct (its stages and transitions) differ for elders who are chronically poor from those who are not? How do poor elders evaluate their lives retrospectively? What is the status of developmental notions including generativity, integrity and lifetime accomplishments among the chronically poor elders?

We operationalize chronic poverty on the basis of both current income and a general lifetime history of poverty. Our sample will consist of 240 formerly married women (widowed, separated, divorced), age 70 and older, divided in the following study groups of 60 informants each: Poor African-and European-Americans and for comparison, Non-poor European- and African-Americans. We will use qualitative interviewing techniques; each subject will be interviewed in 3 weekly approximately 1-2 hour sessions on: Background, Life History; Financial Life History; Life Time and Current Achievements; The Self; The Ideal Life Course and the Future; and social Supports and the Meaning of Economic Assets.

PROJECT NUMBER.....5 R37 AG13993-02

INVESTIGATOR NAME/ADDRESS

RUBINSTEIN, ROBERT L  
PHILADELPHIA GERIATRIC CTR  
5301 OLD YORK ROAD  
PHILADELPHIA, PA 19141

AWARD AMOUNT..... \$294,127

PERFORMING ORGANIZATION: PHILADELPHIA GERIATRIC CTR-FRIEDMAN HOSP  
TITLE: BEREAVEMENT IN LONG TERM CARE

ABSTRACT:

DESCRIPTION: The major aim of the proposed research is to examine how the topic and event of death are understood and acted upon in four long-term care institutions. There has been very little work on the social construction of death in long-term care institutions. Specific aims of the proposed research include the following: 1) assess the effects of distinctive cultural and religious backgrounds of the LTC settings on the treatment and construction of death; 2) examine the institutional organization, framework, and both direct and de facto philosophies concerning death; 3) examine the division of labor among staff and family concerning death-work; 4) investigate the role of death in the daily life of the focal institutions; and 5) assess the mental health effects of current institutional practices on residents, staff and family. Research will occur sequentially in four LTC settings representing distinctive ethnicities and religions (Jewish-American; African-American, primarily Protestant; European American, primarily Irish Catholic, and European American, primarily northern-European Methodist). The methods and analysis will be ethnographic and qualitative in nature, as appropriate for the goals of the study, the research settings, and the level of knowledge development in this area. Consequently, methods will involve in-depth, key informant interviewing; participant observation of activities around death and dying; and case studies.

PROJECT NUMBER.....5 R01 AG13613-03

INVESTIGATOR NAME/ADDRESS

RYFF, CAROL D

INSTITUTE ON AGING

AWARD AMOUNT..... \$209,364

1300 UNIVERSITY AVE, RM 224

MADISON, WI 53706

PERFORMING ORGANIZATION: UNIVERSITY OF WISCONSIN MADISON

TITLE: LIFE HISTORIES AND MENTAL HEALTH IN MIDLIFE

ABSTRACT:

We seek funding to conduct detailed analyses of the life histories and mental statuses of the members of The Wisconsin Longitudinal Study (WLS), which includes over 9000 American men and women who were first interviewed as high school seniors in 1957 and have been reinterviewed in 1964, 1974, and 1992-3. Data have been collected on family background, starting resources, academic abilities, youthful aspirations, adult educational and occupational achievement, work events and conditions, family events, social support, social Comparisons, physical and mental health.

We distinguish among four mental health categories: Depressed/Unwell (those with prior episode(s) of serious depression who also lack high psychological well-being), Healthy (high psychological well-being and no history of serious depression), Vulnerable (no history depression but low profiles of psychological well-being, and Resilient (prior episode(s) depression and high current well-being). Life history data of these groups are organized according to five theoretical concepts: cumulative exposure to adversity (events and chronic conditions), cumulative exposure to advantage (events and conditions), psychological reactions to adversity and advantage, cross-time positions in social hierarchies across life domains, and quality of social relationships. The overarching hypothesis is that life histories of the four mental health groups, and subgroups within them, are distinguished by particular combinations of adversity, advantage, reactions, social hierarchies, an social relationships, as experienced in diverse life domains through time.

Key analytic objectives are to develop quantitative characterizations of life histories associated with each mental health category and test them for distinguishability. Five steps comprise the process of specification and testing of the admissible abstracted chronological representations (AACRs) of each group. These steps, involving a progression from the analysis of individual biographies to the formulation of generic histories, are illustrated with preliminary data on resilient women.

PROJECT NUMBER.....5 R13 AG09787-07

INVESTIGATOR NAME/ADDRESS  
SCHAIE, K WARNER  
PENNSYLVANIA STATE UNIV

AWARD AMOUNT..... \$35,721

UNIVERSITY PARK, PA 16802

PERFORMING ORGANIZATION: PENNSYLVANIA STATE UNIVERSITY-UNIV PARK  
TITLE: CONFERENCE--STRUCTURE AND AGING

ABSTRACT:

DESCRIPTION (adapted from the application): This proposal requests funds to continue a series of conferences designed to explore the interfaces between disciplines concerned with the study of societal macro- and micro-structures and those disciplines specifically concerned with the investigation of individual differences in human aging processes. Thus far the conferences have addressed the topics of: Social Structure and the Psychological Aging Processes (1986); Comparative Perspectives on Age Structuring in Modern Societies (1987); Self-directedness and Efficacy: Causes and Effects throughout the Life Course (1988); Aging, Health Behaviors and Health Outcomes (1989); Social Structure and Caregiving: Family and Cross-National Perspectives (1990); Social Structure and Aging: Historical Perspectives (1991); Societal Impact on Aging: Inter-generational Perspectives (1992); Impact of the Law on Older Adults' Decision-making Capacity: Social, Behavioral, Legal, and Ethical Perspectives (1993); Societal Mechanisms for Maintaining Competence in Old Age (1994); and Impact of Work on Older Individuals (1995). The proposed conferences will address the topics of Social Structures and Mobility in the Elderly (1997); Social Structures and the Aging Self-Concept (1998); and Societal Structures and Effective Health Behavior in the Elderly (1999). Each conference will involve 18 invited participants and up to 60 observers. Papers and discussions will be published in volumes edited by the conference organizers in their "Societal Impact on Aging" series.

PROJECT NUMBER.....5 R01 AG12458-03

INVESTIGATOR NAME/ADDRESS  
SIEGLER, ILENE C  
DUKE UNIVERSITY MEDICAL CTR  
BOX 2969  
DURHAM, NC 27710

AWARD AMOUNT..... \$222,430

PERFORMING ORGANIZATION: DUKE UNIVERSITY

TITLE: MODELS OF PERSONALITY, HEALTH, AND DISEASE IN ADULTHOOD

ABSTRACT:

DESCRIPTION: The long-term objective of the proposed research is to understand the role of personality and the behavioral risk and protective factors and their contribution to health and disease at mid-life. There are two specific aims. The first aim deals with understanding personality-disease associations by focusing on the role of risk factors that may be motivated by personality characteristics. The second aim deals with an understanding of the sources of stability and change in adult personality during the crucial decade of the 40's, and is designed to look at intervening health events compared to other "events" requiring adjustment as stimuli for personality change.

The proposed research builds on two ongoing studies of biobehavioral studies in cardiovascular disease, the University of North Carolina Alumni Heart Study (UNCAHS) and the Mediators of Social Support (MOSS). The UNCAHS cohort was assembled from persons with personality data measured at college entrance in 1964-66 who were invited to join a new prospective study of personality and social factors in coronary heart disease (CHD) and CHD risk in 1986. The UNCAHS is in its eighth year of funding and has adult data on approximately 4,100 men and 900 women and 1,100 of their spouses (900 women and 200 men). This study has collected information on personality and risk behaviors from the age of 19 to 47. The proposed study will accomplish its aims by adding a second adult measure of personality functioning for ongoing study respondents and their spouses approximately 6 years after the first adult measurement and verify reported non-coronary diseases occurring in the cohort before the age of 50 (coronary disease is already verified for this cohort).

The MOSS Study, currently in its 2nd year, is enrolling a consecutive cohort of persons evaluated for coronary artery disease in the Duke Cardiac Catheterization laboratory that will be followed for three years to test hypotheses about the role of social support and mortality in heart disease. This cohort includes approximately 500 middle aged men and women with and without documented CAD who have baseline risk factor and social support data as part of the MOSS protocol.

PROJECT NUMBER.....5 R01 AG12366-03

INVESTIGATOR NAME/ADDRESS  
STEEVES, RICHARD H  
UNIVERSITY OF VIRGINIA  
MCLEOD HALL  
CHARLOTTESVILLE, VA 22903-339

AWARD AMOUNT..... \$147,389

PERFORMING ORGANIZATION: UNIVERSITY OF VIRGINIA CHARLOTTESVILLE  
TITLE: BEREAVEMENT IN AFRICAN AMERICAN AND APPALACHIAN ELDERS

ABSTRACT:

DESCRIPTION: (Adapted from applicant's abstract) This application seeks support to add to the understanding of the experiences of elderly, bereaved spouses of African American and Traditional Appalachian heritage in the rural south. This ethnographic study is aimed at gaining knowledge about the traditional ways in which members of these undeserved and poorly studied cultural groups deal with bereavement. During this three-year study, data will be gathered from approximately 18 informants. The informants will be identified through a hospice program. The investigator as a volunteer for the hospice, will gather data in the informants' homes and communities using participant observation techniques. Hospice volunteers often become quite close to the families they help. Volunteers are involved in the physical care of the dying person and help with domestic chores such as shopping and cleaning and maintaining the home. After the death, volunteers attend the funeral, wake, or other mourning rituals and often become an emotional support person for the bereaved. Because of this intensive and extended (contact with informants will be maintained for up to two years) data collection, considerable knowledge should be generated concerning bereavement (the time it takes to recover from loss), grief (the emotions of bereavement), and mourning (the rituals of bereavement). Data in the form of field notes and transcribed interviews will be treated as texts and will be subjected to a hermeneutic analysis. In this multi-step process of interpretation and categorization of data, the texts will be examined in detail and the most significant or exemplary datum will be identified and organized into the themes that characterize the bereavement of these informants. This research, which will describe the traditional methods used by these two cultures for dealing with bereavement, is the first step in a program of research that will eventually: (a) identify those characteristics of person and environment that make people vulnerable because they inhibit traditional methods of handling bereavement from being successful, and (b) will design and test nursing interventions for these vulnerable people.

PROJECT NUMBER.....1 R55 AG13968-01

INVESTIGATOR NAME/ADDRESS

UCHINO, BERT N

UNIVERSITY OF UTAH

AWARD AMOUNT..... \$100,000

SOCIAL-BEHAVIORAL SCI BLD

SALT LAKE CITY, UT 84112

PERFORMING ORGANIZATION: UNIVERSITY OF UTAH

TITLE: SOCIAL RELATIONS, AGING, AND CARDIOVASCULAR CHANGES

ABSTRACT:

THIS IS A SHANNON AWARD PROVIDING PARTIAL SUPPORT FOR THE RESEARCH PROJECTS THAT FALL SHORT OF THE ASSIGNED INSTITUTE'S FUNDING RANGE BUT ARE IN THE MARGIN OF EXCELLENCE. THE SHANNON AWARD IS INTENDED TO PROVIDE SUPPORT TO TEST THE FEASIBILITY OF THE APPROACH; DEVELOP FURTHER TESTS AND REFINE RESEARCH TECHNIQUES; PERFORM SECONDARY ANALYSIS OR AVAILABLE DATA SETS; OR CONDUCT DISCRETE PROJECTS THAT CAN DEMONSTRATE THE PI'S RESEARCH CAPABILITIES OR LEND ADDITIONAL WEIGHT TO AN ALREADY MERITORIOUS APPLICATION. THE ABSTRACT BELOW IS TAKEN FROM THE ORIGINAL DOCUMENT SUBMITTED BY THE PRINCIPAL INVESTIGATOR.

DESCRIPTION: Aging is typically associated with significant changes in cardiovascular function (e.g., increased blood pressure) that confer increased vulnerability to physical health problems. Research on chronological age and physiological function, however, suggests that physiological and chronological age are not isomorphic, and that social factors may play a role in the aging process. This application proposes to study the cardiovascular responses to laboratory stressors longitudinally for 144 men and women between the ages of 30 to 70. One aim of the proposal is to examine the influence of age on detailed invasive measures of resting cardiovascular function including systolic blood pressure, diastolic blood pressure, heart rate, systolic time intervals, cardiac output, and total peripheral resistance. Although age-related differences in standard resting measures of cardiovascular function (e.g., heart rate, blood pressure) are well-documented, much less is known about the influence of age on cardiovascular responses to psychological stressors. Therefore, a second aim of this research is to examine age-related differences and changes in cardiovascular reactivity during acute psychological stress. A third, and major aim of this research, is to examine a general conceptual model of the influence of positive and negative aspects of social relationships (e.g., social support, social conflict, social ambivalence) on such age-related differences and changes in resting cardiovascular activity and cardiovascular reactivity during acute psychological stress. Based on the proposed conceptual model, these investigators will also examine more specific psychological and behavioral factors that may be mediating these relationships.

PROJECT NUMBER.....5 K08 AG00643-04

INVESTIGATOR NAME/ADDRESS

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AWARD AMOUNT..... \$88,776

PERFORMING ORGANIZATION: DUKE UNIVERSITY  
TITLE: CHRONIC PAIN IN THE NURSING HOME

ABSTRACT:

Because pain is a subjective phenomenon, the documentation of which relies upon accuracy of self-report, little investigative work has been carried out in nursing homes, where dementia is prevalent. Assessment of non-verbal (i.e., behavioral) manifestations of pain may provide a useful alternative pain evaluation strategy for the cognitively impaired. In the three phases of this proposal, the investigator will carefully characterize the prevalence, patterns of presentation, and functional correlates of pain in residents of two long term care facilities. In addition, she will evaluate the pain assessment practices of nursing home personnel. Phase 1 investigations are designed to determine the prevalence and test characteristics (test-retest reliability and baseline variability) of self-reported pain as a function of cognition, after controlling for depression and components of the social network. The ability of chart review and physical examination to predict self-reported pain will also be determined. Phase 2 investigations are designed to develop a performance-based non-verbal (i.e., behavioral) pain observation protocol and then examine its interobserver reliability, relationship to cognitive performance, construct validity, and discriminant validity. Relationships between pain behavior and pain self-report, physical performance and pathology will also be examined. All protocols will be videotaped. Phase 3 investigations are designed to develop a naturalistic pain behavior observation protocol for use in the nursing home, and then determine the influence of such a protocol on nurses' assessments of pain. The relationship between nurses' familiarity with a particular patient, and their assessment of the patient's pain will also be explored. The results of the proposed investigations will facilitate future work toward developing appropriate pain management strategies for nursing home residents with a range of physical and cognitive impairment.